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This comprehensive examination of Arizona junior colleges covers their development, philosophy, present activities, and trends. Enrollment projections for the seven districts must allow for both normal population growth and for commuting distances in thinly populated areas. Existing and planned physical facilities and their use are described in detail. Instructional personnel is discussed by number, student load and contact hours, professional preparation, experience, and turnover. Student personnel specialists are examined according to function, organization, preparation, title, load, facilities, and difficulties. (It is noted that counseling should be continuous from freshman orientation through job placement.) Discussion of the educational program is divided into university-parallel courses; semi-professional, technical, and skill programs; joint programs; enrichment, vocational, and cultural courses; adult courses for refreshing, upgrading, and retraining; programs planned for new districts; uniformity vs. diversity; adaptations to unique local needs; feasibility of certain programs; coordination and articulation with other colleges and universities; extensions and revisions to meet manpower needs; and the over-all holding power of the college and its programs. Characteristics of the students, where they come from, where they go, and how well they succeed are described. Particulars of Arizona's junior college financing and philosophical guidelines for college boards conclude the paper. (HH)

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ARIZONA JUNIOR COLLEGES: AN INVESTMENT IN EDUCATIONAL OPPORTUNITIES FOR YOUTH AND ADULTS

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THE UNIVERSITY OF ARIZONA
COLLEGE OF EDUCATION
BUREAU OF EDUCATIONAL RESEARCH AND SERVICE

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U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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ARIZONA JUNIOR COLLEGES: AN INVESTMENT IN EDUCATIONAL OPPORTUNITIES FOR YOUTH AND ADULTS

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July 1968

UNIVERSITY OF CALIF.
LOS ANGELES

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CLEARINGHOUSE FOR
JUNIOR COLLEGE
INFORMATION

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Letter of Transmittal

July 1, 1968

Dr. John T. Condon, Executive Director
Arizona State Board of Directors
for Junior Colleges
State Office Building East, Room 201
Phoenix, Arizona 85007

Dear Dr. Condon:

Herewith is transmitted through you to the Arizona State Board of Directors for Junior Colleges a survey report entitled Arizona Junior Colleges: An Investment in Youth and Adults. The report is the culmination of a statewide study of junior colleges by the Bureau of Educational Research and Service, College of Education, The University of Arizona, as authorized by the State Board.

In submitting this document, those of us who were engaged in the survey wish to express our appreciation to you and your office staff, to the State Board, and to the scores of persons in the junior college districts who were so cooperative time after time. It has been a genuine pleasure to work with you. Our only regret is that we didn't have time and means to go into even more depth in the study. It seemed like the deeper we got into the project the more possibilities for further study we uncovered. Reluctantly we found that we had to bring the study to a close without pursuing a number of worthwhile subjects of interest and concern.

We would caution those who study this report about making comparisons among the various institutions without first attempting to ascertain the reasons why certain conditions may exist. For example, a given district may seem to have a somewhat high tax rate compared to other districts, but this may be due to the fact that the assessed valuation of the district has been relatively low. Again, another district may seem to have not had a particularly high percentage of utilization of certain facilities. This condition may simply reflect advanced preparation on the part of the district for considerably heavier enrollments to be expected within a year or two.

Arizona appears to be developing an outstanding junior college system. May all of you meet with continued success as you work toward this goal.

Sincerely,

Marsden B. Stokes

Marsden B. Stokes, Director
Bureau of Educational
Research and Service

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CHAPTER I

CHAPTER I

INTRODUCTION

Junior Colleges have different meanings to different individuals. To certain youth they mean the possibility to launch programs of study leading to transfer to four-year colleges and universities. To others the junior college is seen as a hope that saleable vocational or technical skills may be obtained and a better standard of living thereby made possible. Then again, there are others, including adults, who view these institutions as a chance to obtain retraining, more general education, or further cultural development. To all of these persons the junior college is seen as an institution that may benefit them.

Still others who may have no desire to enroll in any of the educational programs offered by junior colleges see in these institutions benefits to the communities in which the schools are located, to the state, and to the nation. They recognize that money spent on education is really not an expense but rather an investment; an investment that pays excellent dividends. There are those who would accept the idea expressed by the title of this report, Arizona Junior Colleges: An Investment in Educational Opportunities for Youth and Adults.

Throughout this survey the term junior college is frequently used to refer to Arizona's post-high school public educational institutions offering primarily two-year programs of instruction. There are many who would prefer that the term junior college not be used. Perhaps some have the feeling that the word junior implies a degree of subordination. Those who have made the study reported herein certainly have no such feelings but rather they recognize the junior college as playing a top role in American education in meeting the needs of those whom it serves.

In Arizona the law refers to the institutions herein discussed as junior colleges. For this reason the survey team has chosen to use the term. Some junior college districts refer to their institutions as community colleges and others simply use the word college. When an institution offers instruction to persons beyond the age of the typical secondary school pupil in a program that is, as the Dictionary of Education says, ". . . geared particularly to the needs and interest of the local area," the term community college seems very appropriate. Names like Cochise College or Arizona Western College seem particularly applicable to two-year post-secondary colleges that serve areas of the state encompassing an entire county or more.

In the pages that follow a description is made of certain selected aspects of the junior college scene in Arizona. The emphasis is on what the current status seems to be. To make broad conclusions from the data were not an assignment to the survey team. Nevertheless, certain implications should be rather self-evident to those who study the report.

The balance of this chapter presents very briefly some historical background on junior colleges in the nation and in Arizona. Also, the chapter considers the purposes, functions, and scope of these institutions particularly as they exist in the state. Attention is directed both to the local and the state level in certain philosophical matters.

In Chapter II the enrollment picture is reviewed, with the focus of attention being on what the near future may have in store. Selected facets of the sites and buildings are examined in Chapter III, while Chapter IV presents some findings about certificated personnel. Quite a detailed discussion of broad areas of the educational program may be found in the fifth chapter and certain financial data are given in Chapter VI. The final chapter, Chapter VII, reviews the highlights of the previous chapters and takes "A Look to the Future" without trying to detail the direction decision makers should go. Nevertheless, some possible guidelines to future action are presented, not as recommendations but as matters that the survey team feels should merit careful consideration.

JUNIOR COLLEGE HISTORY

THE MOVEMENT NATIONWIDE

To see the junior college movement in its proper perspective one needs to understand the development of the institution historically in America. R. J. Young[1], in an address at The University of Arizona in the summer of 1966, briefly traced this development in the nation. Although the progress of the movement has continued since that date, his comments well summarize the historical development to 1966.

> Although a few private two-year colleges had been organized prior to 1900, and a few high schools, notably in Illinois and Michigan, had extended their programs upward to include some college level courses that could be transferred to senior colleges willing to accept them, the junior college is an indigenous American twentieth century phenomenon. Early non-public institutions developed gradually from academies and seminaries. Claims for being first have been made by several institutions, but research indicates that as early as 1852, Lasell Junior College, Auburndale, Massachusetts, offered two years of standard collegiate instruction. Joliet Junior College, Joliet, Illinois, founded in 1902, is the oldest public junior college extant. Public junior colleges developed downward as decapitated four-year institutions and upward as extensions of high school programs to include grades 13 and 14. William Rainey Harper (1856-1906), first President of the University of Chicago, is credited as the "father" of the public junior college because of his influence at Joliet and his early arguments in favor of the junior college as an educational unit.
>
> Although the present junior college has evolved in three major stages since 1900, its roots lie deep in the preceding half century during a period of effort to reform American university education and discussion aimed at reorganizing the public school system. During this "Preparatory Period" or "Idea Stage" of development, rising productivity and increasing national economic wealth, coupled with an awakening public consciousness that education is a social and individual good, interacted to produce junior college movement.
>
> By 1900, there were eight private institutions enrolling 100 students. From then until 1920 was a "Formative Period" during which nearly 200 institutions were established with over 15,000

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[1] R. J. Young, The Junior College in America, The University of Arizona, College of Education, Monograph Series 2, 1967, pp. 5-7.

students enrolled. During this period, the idea and practice of the junior college as a separate educational unit offering the first two years of baccalaureate programs were accepted and achieved. Developing regional accreditation patterns influenced many small weak four-year colleges to become two-year institutions, and normal schools wishing to offer collegiate work in addition to pedagogical subjects became junior colleges. Junior colleges seemed to be the logical next step in the evolution of the public educational system, and they were encouraged by universities experiencing rapid growth and feeling a need to divide secondary work from that of the university.

The second stage of development in this century comprising the years 1920-1945 was a "Period of Diversification" when the earlier enunciated concept of terminal and semiprofessional occupational education gained widespread acceptance, and many institutions expanded their curriculums to encompass those types of programs and to accomplish new types of purposes other than preparing students for senior college. Impetus to these programs was given by such factors as: the national economic depression of the 1930's when many persons sought additional training which would give them competitive advantages in the labor market; the progress of mechanization in mass processing of agricultural produces; and increased automation of industrial processes requiring higher levels of skill and knowledge. By 1945 there were 648 junior colleges enrolling 295,457 students.

The present stage of development known as the "Period of the Community Junior College" has included an increasing emphasis of many junior colleges, especially the public ones, on a close working relationship with the community in the offering of programs especially designed for adults and on a vast array of services to the community. Although there had been a few scattered and sporadic efforts prior to World War II to expand the scope of operation in these directions, the war stimulated community activities as part of the emphasis on training for defense work. So valuable did these offerings and services prove for various segments of the populace that many colleges continued and developed them further in the post-war period. As junior colleges were expanding the scope of their operations, several factors interacted to stimulate their numerical increase, and by 1965 there were 711 junior colleges enrolling over 1,292,700 students. Sixty-five percent were public, and they enrolled about 88 percent of all regularly enrolled full-time students attending junior colleges.

California with 75 public and four private institutions leads all other states in total numbers. Among the states, California and New York, respectively, contain the largest number of public and private junior colleges. Nineteen North Central states contain the largest number of public junior colleges, and the nine Southern states contain the largest

> number of private ones. Pennsylvania has the most two-year university extension centers, and New York contains the largest number of technical institute type junior colleges.
>
> Enrollments range from less than 50 students in some institutions to over 10,000 in others. Seventy-five percent of the private institutions enroll fewer than 600 students, and only 13 percent enroll over a 1,000; whereas 27 percent of the public institutions enroll less than 600 students, and 53 percent enroll over 1,000. Twelve percent of the public institutions each enroll over 5,000 students, but no private institution is that large. Private and public junior colleges are each to be found in 43 states. States without public junior colleges are Delaware, Hawaii, Maine, Louisiana, South Carolina, South Dakota and Tennessee. The comprehensive locally controlled public co-educational junior colleges is indigenous to the United States.

Since Young made the preceding statements the junior college movement has continued to flourish across the nation. According to the 1967 directory of the American Association of Junior Colleges, 39 new junior colleges were scheduled to open that year. Twenty-two states were to have had one or more two-year colleges open. This figure (39) evidently represented a decided under enumeration of the increase in schools, however, for the N.E.A. Journal[1] reported that 74 new junior colleges opened in the fall of 1967 in 29 states. The newsbrief indicated that public junior colleges now number 900 and that they presently enroll 1,665,000 students. This number of students was said to be a 15 percent increase over the previous year. Every state now has at least one public junior college.

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[1] "News and Trends", N.E.A. Journal, Vol. 57, No. 2 (February 1968) p.5.

DEVELOPMENT OF JUNIOR COLLEGES IN ARIZONA

Prior to the enactment of a new junior college law in 1960, there were only two junior colleges in Arizona: Eastern Arizona College at Thatcher and Phoenix College in Phoenix. Although Eastern Arizona College's history dates back to 1888, college work was not offered until 1920, the same year in which Phoenix College opened its doors. In 1927 the State Legislature passed an act providing for the establishment of junior colleges. This law, Ch. 6 of Title 15, A.R.S., allowing junior colleges to operate as part of a high school district, remains as part of the statutes although superseded by Ch. 6.1 providing a state system of junior colleges. However, no institution operates under Ch. 6 at this time, Phoenix College and Eastern Arizona College having become members of the state junior college system.

Arizona's population grew from 499,261 in 1940 to 1,302,161 in 1960. This phenomenal growth, together with the impact of World War II and post-war babies, created a great need and demand for more post-high school education. Faced with the problem of over-crowded collegiate institutions and the ever-increasing educational demands of industry and business, the Arizona State Legislature in 1958 appropriated $30,000 and appointed a joint legislative committee to study the feasibility of expanding the junior college program in Arizona.

The Study Committee, with Robert W. Prochnow, Chairman, consisted of six legislators and six representatives of the four-year higher education institutions. (It is interesting to note that the Committee's Executive Secretary, A. B. Schellenberg, then a legislator, now serves as a member of both the Board of Regents for the universities and the Arizona State Board of Directors for Junior Colleges. Three members of the committee, Senators Thomas Knoles, A. R. Spikes and E. B. Thode, are still active members of the State Legislature.) Mr. Frank Lindsay of the California Department of Public Instruction, was chosen to direct the study. In December 1958 the findings of the committee and its recommendations were published in a report entitled Report of the Junior College Survey Committee, and was submitted to the legislature.

The present junior college law, passed in 1960, was based on findings of the state survey. The Arizona Revised Statutes, Title 15, Education, Ch. 6.1, created a state junior college board and permitted the establishment of county college districts supported in part by counties and in part by the state. All the junior colleges in Arizona now operate under the provisions of this law.

Governor Paul Fannin appointed the first State Board of Directors for Junior Colleges July 1, 1960, consisting of 17 members, one from each county and 3 ex-officio members. The ex-officio members are one member of the Board of Regents of the State Universities, the State Superintendent of Public Instruction and the State Director of Vocational Education.

The original 1960 junior college law provided that the state would pay a sum equal to 50 percent of the total cost for initial capital outlay to $500,000 in each junior college district, plus a capital outlay sum of $115 per capita per annum per full-time student equivalent (FTSE). For operating expense the state paid $525 for the first 320 FTSE annually and those in excess of 320 FTSE, $350 per capita per annum. In 1965 the law was amended to increase the state aid to $525 per FTSE for the first 1,000 students and $350 for each FTSE over that number. This same law provides that each campus in a multi-campus district will receive an initial sum equal to 50 percent of the total cost for capital outlay up to a maximum of $500,000.

At the present time seven of the fourteen counties (Graham, Maricopa, Yuma, Cochise, Pinal, Pima and Yavapai) have organized junior college districts. Four of these (Graham, Maricopa, Yuma and Cochise) have operating junior colleges. The other three are in the process of establishment. Their status at the time of this writing is described in the brief histories that follow.

EASTERN ARIZONA COLLEGE

The origin of Eastern Arizona College was religious. In 1888 the St. Joseph Stake of the Church of Jesus Christ of Latter-Day Saints was authorized to establish an educational institution. In December, 1890, the St. Joseph Stake Academy (later Gila Academy), offering the equivalent of a high school education, opened its doors to 45 students. The academy was closed from 1896 to 1898. In 1920 first-year college courses were introduced and in later years second-year courses were added. In 1926 the University of Arizona accredited Gila Junior College for two years of college work. Beginning with the school year 1938-39, the high school division was discontinued and only courses in the junior college were offered thereafter.

In March, 1933, the citizens of Graham County voted to accept and maintain the college and the school became non-sectarian. After 1937 the state paid a portion of the maintenance cost until EAC was integrated into the state junior college system in 1962, and became the first operating junior college in the state system. The college has experienced a modest physical expansion since that time and has added 35 acres to its original campus of 16 acres.

Since 1965, Dr. Dean A. Curtis has been president of the institution.

MARICOPA COUNTY JUNIOR COLLEGE DISTRICT

On November 6, 1962, the citizens of Maricopa County elected to establish the Maricopa County Junior College District. Phoenix College, with the high school district voters' approval, was transferred to the new junior college organization on July 1, 1963. Shortly thereafter, to better serve on a county-wide basis, three extension campuses were opened: one in northwest Phoenix called Glendale Extension; one in northeastern Phoenix called Camelback Extension; and the third one in Mesa, called Mesa Extension. The extensions were operated under the administration of Phoenix College. These were later organized into separate junior colleges in Glendale and Mesa. They grew from an enrollment of 1,092 the first year to a total of 3,300 in the third year of operation.

In May, 1963 the County real property taxpayers turned down a $9,750,000 bond issue. In the spring of 1964, however, a bond issue of $4,800,000 was approved and two new campus sites were purchased, one at 59th Avenue and Olive, Glendale, and one at Dobson Road and Southern, Mesa, Arizona.

Dr. Robert J. Hannelly, associated with Phoenix College since 1927, first as chairman of the Mathematics Department and later as the college's dean from 1947 to 1965, became the district's first president. Dr. Hannelly also served for several months in 1961 as Special Advisor on a part-time basis to the State Board, just prior to the enactment of the new junior college law. Dr. Hannelly was serving as President Emeritus at the time of this writing and Dr. John F. Prince, long affiliated with the junior college movement in Arizona at various levels, was President.

The district now has three operating junior colleges which are described briefly below. In addition the district and the State Board have recently acquired a down-town facility, to be known as Maricopa Technical College, to be used primarily for technical training programs and administrative offices for the district. A site has been selected and an initial appropriation of $500,000 has been made by the State Legislature for the establishment of a community college in the Scottsdale area and plans for a campus in that area are underway to take care of the ever-increasing junior college students in the district.

Phoenix College: Phoenix College was established in 1920 as part of the Phoenix Union High School District. Fifteen students comprised the first student body. Continuing a steady growth the college moved into a new building at 75th Street and Fillmore, Phoenix, in 1928. The college moved onto its present campus located at 1202 West Thomas Road in 1929.

Phoenix College was accredited in 1928 by the North Central Association, the second junior college in the state to receive this recognition.

The college, located on 47 acres in the heart of Phoenix, has 15 permanent buildings and many temporary ones. A new student union and library have recently been added, and the entire campus has undergone a face-lifting, and is restored to its former red-brick exterior.

Phoenix College is the largest of the colleges in the district. Because of over-crowded conditions, the District Board found it necessary to restrict the enrollment beginning September 1966.

Mesa Community College: The Maricopa County Junior College District opened Mesa Community College in rented buildings in September, 1965. The college moved onto its permanent campus of 160 acres, located at Dobson Road and Southern Avenue, Mesa, in September, 1966. Three permanent buildings constructed in a Spanish-Indian architectural style and 30 temporary ones accommodated the collegiate programs offered during the 1966-67 school year. The campus, master-planned for 5,000 students, continues with its building program. Recent construction includes a new science building, a library and a gymnasium. The staff from the former extension center transferred to this campus and this group has since been augmented to meet increased staff needs.

Glendale Community College: The Maricopa District combined the Camelback and Glendale Extensions to establish Glendale Community College in September, 1965. In the summer of 1966 the staff transferred from the extensions to its present campus site of 160 acres located at 6000 Olive Avenue, Glendale, where it serves the citizens of western Maricopa County. The building architectural style of the 13 permanent buildings is contemporary, with touches of Spanish and Indian, set among scores of beautiful palm trees.

The campus is also master-planned for 5,000 students.

Maricopa Technical College: At the time of the final writing of this report, Maricopa Technical College was the most recently established college in the Maricopa County Junior College District. This unit, located in a multistory building in downtown Phoenix, was acquired in 1967 and the central administrative offices for the district were established in the upper portion of the building the latter part of that year. The structure has been undergoing extensive remodeling to adapt it to the purpose of providing occupationally oriented educational opportunities. Because of the new college's central location and accessibility to both business-industrial concerns and the citizens of the community, it is uniquely suited to its mission. The college is intended to serve the entire county through liberal admissions policies and a diversity of occupational programs of study.

Scottsdale Community College: The countywide district has been moving forward with plans and actions leading to the establishment of its fifth campus, to be located in the Scottsdale area. Early in 1968 the State Legislature appropriated $500,000 to assist in the provision of building facilities for this new institution, which is to get underway in the near future. It is planned that this institution will offer a well-rounded program to meet the needs of as large an enrollment as its sister institutions in the county.

ARIZONA WESTERN COLLEGE

Arizona Western College, Yuma, Arizona, was the first new college to be organized under the 1960 junior college law and the first new public institution of higher education in Arizona since 1920. It was created by the voters on September

12, 1961, and the following May, 1962, the taxpayers voted a $1,550,000 bond issue to construct the new college on its 640 acres site. The college opened in September, 1963, with an enrollment of 1,086, exceeding all expectations, and has since experienced considerable growth.

By the fall of 1966 there were 24 buildings on the campus, including three dormitories. Many of these buildings had refrigeration cooling.

Dr. George Hall is president of AWC. He followed Dr. John B. Barnes in that Office.

COCHISE COLLEGE

On October 17, 1961, Cochise College became the second new college to be organized under the 1960 Act. Following a successful bond issue on August 21, 1962, the original twelve-building project was constructed on a 540-acre plot of state land, located on Alternate Highway 80 between Douglas and Bisbee. Further construction has continued since that date. Cochise also has dormitories to serve its widespread county as well as surrounding areas.

Classes began in September, 1964, with 1,018 students enrolled.

Dr. Jack R. Netcher became president of the college in August, 1966, following William Harwood in that office.

CENTRAL ARIZONA COLLEGE

Pinal County voted to organize a junior college district on December 17, 1961. Within thirty days a five-member Board, consisting of Mr. C. M. Compton, Casa Grande; C. Leroy Hoyt, Kearny; Paul Pearce, Eloy; Dr. L. A. Wakefield, Florence; and Dr. Glen H. Walker, Coolidge, was appointed by the county school superintendent. The first meeting of the Board was held on January 16, 1961, in the chamber of the Board of Supervisors in the Courthouse in Florence.

On January 7, 1963, the local governing board unanimously passed a resolution naming the school "Central Arizona College." A bond election was held after a site for the college was selected approximately three miles east of Casa Grande. This bond election for 1.9 million dollars, held on December 19, 1963, was defeated. It was felt by many that the close proximity of the site to Casa Grande contributed in some part to the defeat of the bond measure. Working on this assumption, numerous sites were investigated subsequently, in an effort to find a more centrally accessible location to more of the major communities of the county hopefully in order to receive their support in a future bond election.

Finally, a 400 acre site was designated at the base of Signal Peak in October of 1966. Three hundred twenty acres of this land was to be purchased from the State of Arizona, and 80 acres was donated as a gift from interested citizens holding title to these 80 acres.

On May 2, 1967, a bond issue for two million dollars was passed.

Mr. Horace J. Chesley served as interim Executive Secretary to the Board from April, 1966, until the appointment of the first president, effective July 1, 1967. On May 19, 1967, Dr. Don P. Pence was appointed to serve as the first president of Central Arizona College.

Curriculum and educational specifications for buildings were developed by the staff and subsequently approved by the State Board of Directors for Junior Colleges. Correspondent Status with the North Central Association of Colleges and Secondary Schools was requested and granted as the first step towards accreditation and to make the school eligible to receive federal funds for construction. At the time of this writing, all proposals had been prepared by the staff, approved by the appropriate boards and committees and all preparations towards the eventual development of physical facilities on campus were proceeding on schedule. Barring unforeseen financial or construction difficulties, the college will be ready for occupancy in September of 1969.

PIMA COLLEGE

In October, 1965, the Tucson Youth Board extended an invitation to the Tucson Chamber of Commerce and the Tucson Community Council to join with them in the effort to establish a junior college district in Pima County. Over thirty-five organizations and individuals responsed to a call to form the Planning and Development Committee which held its first meeting on November 23, 1965. The Arizona State Board of Directors for Junior Colleges granted $10,000 to help make a feasibility study, and a matching amount of goods and services was pledged by local agencies. Dr. Raymond J. Young, of Michigan State University, was engaged as director of the feasibility study.

Eventually over 100 Pima County citizens and organizations participated in the accumulation and analysis of the data. The feasibility report was presented to the public and the Arizona State Board of Directors for Junior Colleges in July, 1966.

During the summer of 1966 petitions to place on the ballot the question of the creation of a Pima County junior college district were circulated and on November 8, 1966 Pima County voters authorized the creation of a district by a vote of 35,363 to 12,069.

Following the election that created the district, the Planning and Development Committee unanimously chose a site of 273 acres of federal land two and one-half miles to the west of Tucson's central business district. This report was presented to the Governing Board at a public meeting on March 15, 1967, and on April 17, 1967, the State Junior College Board affirmed the selection.

In February, 1967, four new citizens' subcommittees were formed to assist the district board. Facilities and personnel committees established criteria and screened architectural firms and presidential applicants, and the Governing Board, in cooperation with the Educational Planning Committee, developed a statement of educational goals and retained Arthur D. Little, Inc., to aid in the educational planning process by developing program guidelines and space requirements for three enrollment levels.

After the Facilities Committee had aided in screening local applicants for the architectural program, the Board voted in April to recommend to the State Board the architectural firm of Caudill Rowlett Scott of Houston, Texas, to work in conjunction with the Tucson association of Friedman, Jobusch, and Wilde.

Concurrently, the Financial Advisory Committee and fiscal officers of other Arizona junior colleges together with advisors to the State Board assisted the district board in determining the size of the bond issue to be requested.

During the summer of 1967 the architects developed a master campus plan proposal, and in September the Governing Board appointed a president for the new institution, Dr. Oliver Laine. On October 3 a bond issue of $5,990,000.00 was approved by property owners, the vote being 8,526 to 5,342. At the same time the first regular board of five trustees was elected with the three appointed members who chose to run being elected for terms of five, four and three years.

During the winter and spring of 1968, the architects completed schematic designs, based on revisions of space allocations and instructional strategy presented in the Educational Specifications developed by the college staff and consultants.

YAVAPAI COLLEGE

The original meetings to begin planning for a Junior College in Yavapai County were held in January of 1966 and a planning committee was selected. Through the efforts of the planning committee and other interested citizens an election was held on November 8, 1966 and the district was officially voted into being.

On December 12, 1966, County School Superintendent Warner B. Dixon, Sr., appointed a five-man board to direct the future course of the college. The initial meeting of the board was held on January 5, 1967 with the five newly appointed members present. They were Richard Walraven, Roy Campbell, Duane Miller, Walter Statler, and Fred Wheadon. Mr. Walraven was elected as president of the board at the meeting.

The State Board of Directors for Junior Colleges officially approved the Whipple site in Prescott as the location for the college in its regular meeting on February 20, 1967.

John W. Barnes, formerly Vice-President of Kilgore College, Kilgore, Texas was elected president of Yavapai College on April 15, 1967. On April 17, 1967 the State Board approved the petition presented by the local Board of Trustees calling for a bond election in the amount of $2,500,000 to be held on May 23, 1967. The election was held on that day and the voters of Yavapai County passed the election giving the College the necessary funds to begin planning a campus. Mr. Bennie Gonzales, Phoenix architect was selected in June, 1967 to design and supervise construction of the initial building program for the College.

FUNCTIONS OF THE JUNIOR COLLEGE

The basic functions of the junior college in both Arizona and the nation generally can be identified as follows:

1. Preparation or college transfer function. This title denotes the typical first and second year programs that will transfer to a senior college or university, and the courses serving this function are designed for those who wish to move toward a professional career or liberal arts course resulting in a bachelor degree.

2. Terminal or semi-professional function. The courses serving this function are designed to provide complete training in a semi-professional field from which the graduate can move into his respective vocation. Trade-level vocational programs may or may not be a part of this function.

3. Counseling and guidance function. This function concerns itself with helping students find their place in society and making reasonable adjustments to it. It includes assistance in the selection of, preparing for, and entering into an occupation.

4. Basic skills or general education function. Those students wishing to "round out" their cultural education, and who plan to make immediate entry into an occupation, or transfer for further education are served by this function.

5. Rehabilitating and democratizing function. This function serves the non-high school graduate, the student who fails to satisfy four-year college entrance requirements or the individual who otherwise could not have afforded post-high school education. It is designed to assist in producing contributing members of a democratic society.

6. Community service function. Through this function the junior college seeks to reflect and enrich local economic and sociological demands and conditions. This function is the source of the community college idea which has been closely associated with junior colleges.

7. Re-training and up-dating function. Adults changing employment voluntarily or otherwise and those whose skills and competencies in their present employment need up-dating or extension are served by this function.

8. Cultural function. This function is served by providing cultural enrichment courses and activities for those who seek culture for culture's sake.

GENERAL JUNIOR COLLEGE PHILOSOPHY

The typical junior college in the United States is an educational institution designed for post-high school programs of approximately two years duration, often accompanied by other educational services centered on cultural and community interests. The pattern is by no means standardized across the country and ranges from comprehensive programs serving a considerable range of student interests, purposes, occupational objectives and abilities to highly specialized offerings designed for specific student groups.

Junior colleges have evolved in the United States and in Arizona under a set of philosophical guidelines characterized by:

1. A belief that a nation's most valuable resources are her human resources.

2. A belief that these resources can be nurtured optimumly by appropriate types and levels of educational training.

3. A belief that such training will redound to the advantage of the social, civic, and economic life of the nation.

4. A belief that every community has salvageable human resources that are not adequately developed through the high school and college or university system.

5. A recognition that every community has increasing numbers of capable adult workers and homemakers who desire and need opportunity for education and training beyond the high school and to whom such opportunity is not readily available.

6. A belief that every community can and should be upgraded by the pervasive influence which emanates from post-high school education and that this influence is enhanced by the cultural, esthetic, and athletic experiences included in the extra curricular programs of this education.

7. A realization that post-high school educational opportunities are extended by both the geographical proximity of the institution and its ability to cope with the diversity of educational factors not generally provided for in the high school-college pattern.

8. Recognition that increasing numbers of capable and motivated youth are finding decreased opportunity for initial enrollment in good private and public four-year colleges and universities due to the population explosion and more selective admission requirements.

9. A recognition of the limitation of educational opportunity imposed by financial considerations under the four-year college system.

10. A desire to fend against the ever-increasing depersonalization factors inherent in large and remote colleges and universities.

11. An effort to extend guidance and counseling services beyond the high school.

12. A concern for rehabilitation and retraining of adults and extension of opportunity for capable and motivated high school drop-outs.

13. An awareness of the possibilities for cooperation with feeder high schools in providing their gifted or talented students with opportunity and challenge.

UNIQUE PROBLEMS OF JUNIOR COLLEGES

Junior colleges are themselves unique and consequently many of their problems fall into this category. Roger H. Garrison has identified some of these problems.[1] The following are drawn from his development:

1. The junior college is neither university nor secondary school, yet its teachers want to draw elements from each. For example, they want to teach and not publish and yet they want the academic rank and teaching load of the university.

2. The public has yet to be educated more sophisticatedly about this junior college which is neither secondary school nor university.

3. Junior colleges need administrators who know the nature of the game they are in.

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[1] Garrison, Roger H., "Unique Problems of Junior Colleges," In Search of Leaders, G. Kerry Smith, ed., AAHE, Washington, D.C., 1967, pp.222-231.

4. The faculty is an amalgam drawn from diverse backgrounds to an institution which has grown 425 percent in the past four years and whose veteran faculty members have been with the college less than five years.

5. The open pragmatism of the instructional aims of the junior college pose a dilemma in the production of transfer students who have developed even the rudiments of general culture in two years time.

6. In the technical-vocational and job-skill fields the challenge is to produce an employable product who knows something well and can do something well.

7. Junior college teaching must be more immediate, more relevant to clearly seen needs thus the teacher generally becomes a purveyor of the applicable rather than a pure scholar.

8. The junior college faculty member must spend a great deal of time helping individual students rather than teaching subjects.

9. In the junior colleges the student must often be brought to the discipline rather than the discipline being brought to the student.

10. The junior college in general allows only two years time to equip the student to cope independently with a discipline or skill.

We close this section by quoting directly from Garrison[2]:

> The comprehensive two-year public college is, indeed, an institution whose time has come. It is a response to a country's aspiration that its citizens shall have open-ended educational opportunity. It is a functional answer to the spreading needs of a technical-industrial society now full time in a cybernetic revolution. Like most of our social institutions, it will be called upon for ever more and more services, while at the same time--mainly because of lack of full understanding of the public--it will be endemically underfinanced, understaffed, and overpopulated. That the junior college will solve its problems as time goes on, most of us hope and believe. _How_ the problems will be solved--and _when_, if soon enough--and _if_ at the high professional level we hope for--are matters that keep those of us in junior colleges restless at night and plague us, on occasion, with bad dreams.

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[2] _Ibid._, pp. 230-231.

STATEMENTS OF PHILOSOPHY OF JUNIOR COLLEGES OF ARIZONA

The Arizona State Board of Directors for Junior Colleges is charged by the laws of Arizona to develop and maintain junior college educational-training programs. It has evolved certain guiding principles to assist it in determining policy and in making decisions. The first of these is to enforce the laws relevant to its educational responsibilities. It strives to keep the Arizona legislature and other pertinent agencies informed and to make legislative requests based on sound research and judgment. In addition, it works harmoniously with the other elected and appointive officials of the State of Arizona for the welfare of all levels of Arizona education.

Because several boards, one at the state level and one in each district, are responsible for the administration of the college program, the State Board endeavors to work cooperatively in establishing policies and administering practices and procedures.

The junior colleges of Arizona, being non-selective in their admission policies, should offer a comprehensive educational program to meet the educational and training needs of the heterogeneous student bodies. Accordingly, the State Board requires the following curricular offerings:

1. General education courses for all full-time students.

2. Courses equivalent to those taken in freshman and sophomore years of the university.

3. Vocational-technical and semi-professional programs suited to Arizona's economy and the general needs of our nation.

4. Continuing educational opportunity for all citizens capable of profiting from training and study beyond the high school.

5. Service and cultural programs to enrich the cultural life of the citizens.

6. Academic and occupational counseling with job placement services.

And, finally, the State Board emphasizes the necessity of enlightening research, experimentation, and consultation to keep the program alive with the best that is thought, written, and practiced in the field of junior college education.

A statement of philosophy may be found in each of the six catalogs published by Arizona's junior colleges. The statements are reproduced here as contained in the 1967-1968 editions.

Arizona Western College

> As a state two-year institution, Arizona Western College exists to provide educational opportunity for the citizens of its area of service. The student and the public should avail themselves of this opportunity; there is a partnership between learners and teachers, between the public and the college, for what is brought into the learning experience will in some measure determine what is found there.
>
> We believe that democracy is dependent upon an educational system capable of developing, to the fullest extent, the talents of its citizens. The college should be flexible in its offerings and services and adaptable to the changing needs and demands of the public and the times.

Cochise College

> Cochise College as a comprehensive community junior college, is dedicated to the service of its community. The college shall make education beyond the high school level available to all students interested in, and capable of, benefiting from such a program of higher education.
>
> The quality and effectiveness of instruction offered by the college is important to all those interested in higher education--students, teachers, administrators, alumni, and the general public. It is the responsibility of the administration of the college to facilitate instruction and lead its staff and students to personal and group fulfillment in their educational endeavors. Free communication, a free flow of ideas and feelings, among the administration, the faculty, the students, and the community is essential for the realization of personal and institutional goals.

Eastern Arizona College

> Eastern Arizona College is dedicated to the democratic principle of providing an opportunity for a college education for all who can benefit from it. Since the students are a cross section with a variety of ambitions and talents, the college tries to meet the needs of not only the superior students but all of those who have failed to reach the top level

of achievement. The philosophy expressed by the college recognizes the worth of the individual and hopes to contribute to the culture and social improvement of all of her students as well as to aid them in acquiring knowledge and skills which will prepare them for their individual careers. A democratic approach is used to ascertain and serve most effectively the requirements of both the student and the community.

Glendale Community College

Glendale Community College regards its function as the education of the whole man. It offers a three-point program to accomplish this purpose: (1) to help the development of individuals seeking maturity of mind and body; (2) to transmit to interested persons the accumulated wealth of our culture and traditions; (3) to assist non-matriculating students to update their knowledge and skills for a better adjustment to a changing world.. The college will serve three spheres of educational interest: persons wishing terminal training, those desiring to continue work at a four-year institution, and individuals in the community who want to keep their minds and skills flexible and alive.

In fulfilling its purpose, the college offers the individual opportunity to pursue an education suited to his unique interests and professional or vocational objectives. Through the school's technical, vocational, physical education, and pre-professional courses, the student can gain the ability to cope with today's complex society.

The need for individual excellence and leadership is greater than ever. And the requirement for such qualities, framed in justice and social responsibility, can be accomplished best by an educational institution dedicated to developing the best in man as he is in his community. The Glendale Community College is such an institution.

Mesa Community College

The philosophy of Mesa Community College is based on the following principles:

1. EQUAL OPPORTUNITY -- that Mesa Community College provide higher education, both in the semi-professional and college-parallel areas, on the basis of equal opportunity for all who desire it and can benefit from it;

2. TAX SUPPORT AND LOW COST -- that Mesa Community College provide this education on the basis of tax support and at as low a cost as possible to the student, consistent always with sound educational practices;

3. EMPHASIS ON TEACHING -- that Mesa Community College emphasize effective teaching, guidance, and learning opportunities, and that teaching provide as much teacher-student contact as possible;

4. EDUCATION PROGRAM -- that Mesa Community College maintain an educational program which is conducive to both the student's self-realization and to his individual responsibility as citizen, family member and worker;

5. COMMUNITY IDENTIFICATION -- that Mesa Community College serve and be served by its community in all the proper areas of mutual cooperation.

Phoenix College

Students should be educated in and for democracy. They should recognize the ethical principles of democracy, the brotherhood of man, and the dignity and worth of the individual. They should be willing to consider different ideas, to study all sides of a question, to develop habits for critical thinking, and to fight bigotry and superstition, yet they should be capable of independent thinking. They should be conscious of group and social responsibility, yet understand that in our democratic way of life they are free to attain self-realization so long as this is consonant with the collective good. They should consider the obligations and duties of citizenship and not just the liberties and privileges of citizenship. They should be helped to recognize and to accept and to fulfill their responsibilites in the world of which they are a part. The national and international problems should be accepted by the students as their problems as well as their responsibility.

Students should be given specialized training based upon a broad educational foundation with much stress on scholarship. They should be given opportunity to explore a number of different areas, especially if they have not decided on a definite course of study. The benefits of college life should accrue to those who do not complete a degree-granting program as well as to those who do. They should be helped to understand themselves, and to plan their life work in terms of that understanding, to live fully, to enjoy themselves and the association with others, to derive great happiness and satisfaction from their vocational and avocational life, to make worthwhile use of leisure time as well as fragments of time, to entertain themselves without constant external stimulation, to adjust to changing times -- to become their own best selves. During their college life, students should be encouraged to contribute and to achieve to the fullest capacity. The administration and faculty of the College should be alert to every possibility of having all students participate individually and collectively in acquiring these understandings and attitudes. Thus students should learn to fit into the ultimate social and vocational environment and to help themselves as members of society.

Tentative philosophical statements have also been developed by the three recently organized junior college districts. These statements are submitted below.

Central Arizona College

Because every individual in the United States must think as ably and as clearly as possible to enhance the well-being of our democratic way of life in the time of its gravest challenge; because every individual in the United States must have the finest education to satisfy his social wishes and assume his full responsibility as a citizen in his community, in his state, and in his country; because every individual in our nation must have the very best education in order to satisfy his economic wants through his ability to assume responsibility in the highly complex and technical age in which we live; and because the community college is superbly conceived to provide expanding opportunities in education for our growing and demanding population--we of Central Arizona College are proud to dedicate our efforts to the realization of these goals.

Yavapai College

The philosophy of Yavapai College is to do for the students of Yavapai County and for other students who choose to enroll an extraordinary job in the field of higher education. To do an extraordinary job in the field of education, first, we must decide the real objectives of the college. Should we follow tradition for tradition's sake or should we dare launch out and develop a program with twentieth century ideas for twentieth century youth? Tradition is wonderful when it satisfies a need, but is often as outdated as the "horse and buggy" in the jet age. There is very little room in our modern day society for 2 by 4 education: this meaning between the two (2) covers of a textbook and the four (4) walls of a classroom. Education has evolved into a period when we must abandon the 2 by 4 philosophy and move into closed-circuit television, instant data recall, computers, projectors, tape recorders, team teaching, electronics and other modern techniques.

Buildings must be designed with fresh new ideas capable of fulfilling the needs of the twentieth and twenty-first centuries. They must have a flexibility to meet the needs of today, but at the same time must be easily changed to adapt to the needs of tomorrow.

Yavapai College is to be designed, built, equipped, and operated as a student centered college. Unless it serves the needs of the student then the chief reason for its existence is not realized. It will be a democratic institution operated within the rules and regulations prescribed by the district governing board, the State Board of Directors for Junior

Colleges and the Arizona Revised Statutes. Students, faculty, staff, and board will work together in an effort to create an institution where all can work and profit together.

Yavapai College will not abandon tradition unless a better way of accomplishing its goal is discovered. The College will be dedicated to doing the best it can in fulfilling the requirements of those students who enroll. If traditional methods are the best way, then traditional methods will be used. If a modern fresh technique is the best way, then traditional methods will be abandoned in its favor. The pledge of Yavapai College is to never cease looking for better ways of accomplishing our goal - Education.

Pima College

The Pima County Community College provides an open door of educational opportunity. It is more interested in what a student is ready to do than in what he has done. Seriousness of purpose and the ability to profit from selected instruction are the characteristics most sought among those who enroll. The college expects each student to demonstrate satisfactory performance and to make no compromise with quality.

Arizona law defines a Junior College as an "educational institution which provides a program not exceeding two years training in the arts, sciences, and humanities beyond the twelfth grade of the public or private high school curriculum of vocational education, including terminal courses of a technical and vocational nature and courses beyond the basic education courses for adults."

The Pima County Junior College operates within this definition and declares its functions to include:

1. General education to prepare students for intelligent living.

2. Occupational education programs of varying length to prepare students for useful and satisfying vocations not requiring a baccalaureate degree, with particular emphasis on community needs.

3. Two years lower division collegiate work to enable students to progress smoothly into upper division work at the universities.

4. Continuing education courses to satisfy the vocational and avocational aspirations of those young people and adults who usually attend evening classes.

5. Guidance and personal counseling services to assist students in making sound decisions concerning their academic work and future careers.
6. Community services related to identified needs including cultural, recreational, and general interest programs.

> Beyond this, the college administration and board have made a commitment to a student-centered institution, one that focuses on student development through a system emphasizing guided peer group approaches to learning and through a commitment to student-faculty interaction and interdisciplinary mix.

A written statement about purposes, supplied by the Dean of Student Personnel for the recently established Maricopa Technical College, provides some insight relative to the philosophical orientation of that institution.

> As the needs of a community change, it becomes essential that its educational institutions be flexible to meet that change. To the individual adult, continuing education is essential to maintain social and economic stability. Education provides a major vehicle for the individual to contribute and share in a democratic society. Instruction must be directed to the needs of the individual and the social-economic environment in which he is to participate. It is within this context that Maricopa Technical College seeks to provide primarily occupational education opportunities to the community.
>
> The College serves the adult who needs to acquire basic skills for entry level jobs; wishes to improve upon existing skills to maintain his present position; who is under-employed and desires to obtain new skills to gain a higher level position; or becomes occupationally displaced because of technological changes.

PRESENT ROLE OF THE STATE BOARD

An analysis of the current policy book of Arizona State Board of Directors for Junior Colleges indicates some board policy involvement in the following areas:

1. Architects for campus planning and building.
2. Bonds-Revenues and accounting procedures.
3. Building procedures.
4. Budget policies.
5. Insurance.
6. Certification standards.
7. Curricular standards.
8. Faculty standards.
9. General program.
10. Library standards.
11. Personnel policies.
12. Military personnel.
13. Salary schedule.
14. Student activity.
15. Textbook selection.
16. Tuition and fees.
17. Miscellaneous.

Of these 17 areas some specific involvement in numbers 1, 2, 3, 4, 6, 7, 8, and 16 is required by law, as specified in S15-660 through 669 and 686 through 692. The remaining 9 areas are within the broad general powers legally assigned to the Board under S15-660, 1 and 2, namely:

1. The State Board shall enact ordinances for the government of the institution under its jurisdiction.

2. The State Board shall set standards for the establishment, development, administration, operation and accreditation of junior colleges.

S15-660 also contains the following:

3. Permit and arrange for certification of experienced and qualified community leaders in business, the professions and the arts, for the purpose of teaching classes at a junior college in fields of their specific competence.

4. Establish qualifications of the instructional staff and establish standards of vocational competence required to instruct in occupational as well as academic subjects.

5. Fix tuitions and fees to be charged and graduate the tuitions and fees between institutions and between residents, non-residents, and students from foreign countries.

6. Establish curriculums and designate courses at the several institutions which in its judgment will best serve the interests of the state.

7. Fix and collect fees for issuance and renewal of certificates as provided in paragraphs 3 and 4 of this act.

In addition to the corporate and general administrative powers of the State Board, they are vested by law with certain other specific powers and responsibilities referred to above. They are:

S15-661. Power to cooperate with the officials of any district to integrate existing districts into the State system. (Procedure outlined)

S15-662. Power to prepare a plan for integrating a specific district and present it to the legislature. (Procedure outlined)

S15-663. Power to employ legal council to procure federal loans. (Detail for financing)

S15-664. Responsibility for annual report to governor. (Detail)

S15-666. Power to determine eligibility of county or counties to organize a district. (Detail)

S15-667. Power to approve petitions to form a district. (Detail)

S15-669. Responsibility to present a plan for formation of a junior college district to the legislature.

E S15-686. Power to approve bond election in junior college districts.

H S15-686. Responsibility for proration of capital outlays in each county of a district.

S15-687. Responsibility to receive college president's reports. (Detail given)

S15-688-A. Responsibility to receive junior college budget from each district.

S15-690-A-1. Power to disapprove or give approval on building, equipment and campus of each junior college in order to receive State aid.

S15-690-A-3. Power to disapprove or give approval on budgets and curriculum, etc., for each district in order to receive State aid.

S15-691. Responsibility to present claims to state auditor and relay State aid funds to junior college district through the county treasurers. (Detail of process given)

S15-692. Responsibility of the State Board to petition the legislature for legislation which permits the establishment of the district and sets forth the terms under which the bonded indebtedness, other debts and assets are transferred to the district.

The 15 legal powers and responsibilities identified immediately above are generally of such a nature that routine operation would guarantee the Board fulfilling its obligation and as one studies the entries in the Policy Book it would appear that involvement in the respective areas has been forced by practical considerations. No evidence was found that the Board has acted autocratically or sought unwarranted power or jurisdiction.

In areas specifically designated by law such as library standards, military personnel, salary schedule, student activities, textbook selection, tuition and fees it would appear that the Board has acted wisely in setting minimum guidelines for purposes of uniformity or, as in the case of "salary schedule," in assigning the responsibility specifically to the district board.

While the section of the Policy Book relating to student activity may on the surface appear to be outside the jurisdiction of the State Board, it is encompassed by the board power specified in ARS 15:660. Close examination of the content of the student activity section reveals only general minimum guidelines designed for the protection of the students themselves and detailed regulation of budgetary and financial matters. In view of the complex interrelationship of student and college funds this latter action seems to be completely defensible.

Only one danger zone was detected in the Policy Book. This exists under the heading of textbook selection. While the entry here is terse and basically sound in assigning the selection to the local instructors and departments, the final phrase "subject to review by the State Board" is not in keeping with the departmental autonomy that has characterized higher education in the U. S. and provides a loophole through which unscrupulous persons may retard the progress of or damage the entire establishment. Furthermore, the restriction of a text to a recent copyright date, which occurs in the policy statement, is crippling and unwarranted.

This section should be reconsidered with a view toward liberalization of policy either by placing the entire responsibility at the local level or providing for a committee of professional educators to hear criticisms, review recommendations and approve adoptions.

DISTRICT BOARDS

No effort will be made here to identify or analyze the duties, powers, and responsibilities of the junior college district governing boards. Articles 4 and 5 of Title 15 Education of the Arizona Revised Statutes enumerates these in detail. While one may disagree with some of the items under S15-679 "Power and Duties" nevertheless this is the law and it is possible, through broad interpretation and proper delegation from the state board, to live with it. Actually it appears that this is exactly what has been done to date and the state board is to be commended for its delegation of responsibility to the district boards and its willingness to leave district problems in local hands wherever possible.

If at a later date it appears feasible to amend the statutes under S15-679, such amendments might take the following directions:

1. The inclusion of one or more general statements of power and responsibility such as "the power and responsibility to operate the local institution in a manner conducive to attainment of recognized junior college objectives and within the frame-work established by the legislature and the state board."

2. The exclusion of specific powers and responsibilities which are or may become inhibitive to the achievement of objectives. S15-679-A-4 is a case in point. "Exclude from the college all books, publications or papers of a sectarian, partisan or denominational character intended for use as textbooks."

PROMISING TRENDS

These statements of philosophy indicate the breadth of responsibility and commitment made by these institutions and reflect a sensitivity to state and local needs. While it is difficult to detect trends because of the magnitude of the original commitments and the fact that all but two of these institutions have come into existence since 1960, one sees clearly from the program offerings an alertness to both the original commitments and to extended service. Each of the junior colleges has plans for extending its programs and service. Characteristic of these trends are those of Glendale Community College, which indicates that the para-medical field will be intensified and dental hygiene, X-ray technical, medical laboratory technician, and inhalation therapy are being considered for inclusion in the curriculum. Other trends are reflected in the establishment of flight training at Cochise College and the program being developed in the recently established Maricopa Technical College in downtown Phoenix.

These and other developments indicate a willingness on the part of both local institutions and the state administration to meet expanding needs.

It would be amiss at this point to fail to mention the effect of the enabling legislation passed by the Arizona State Legislature on both the philosophy and programs of the junior colleges. Few states have had junior college movements as well conceived and legislation as supportive as has Arizona. As a result junior college surveys have been made in the various counties and districts established whenever the criteria have been met and the approval of the voters obtained.

CHAPTER II

CHAPTER II

THE FUTURE ENROLLMENT PICTURE

In preparing long-range programs of development of higher educational institutions, it is necessary to consider the number of students to be accommodated. Attention must be given not only to the current enrollment situation but also to how many students may reasonably be expected to matriculate during the next succeeding period of years. Of course, the size of future enrollments can be estimated only, since there is no known method of predicting future school or college populations with guaranteed accuracy. In making estimates, it is necessary to take into account as many of the known facts as feasible, interpret them as accurately as possible in terms of future enrollments, and then plan development programs that are sufficiently flexible that they may be altered if it is found later that actual numbers of college students tend to deviate markedly from the estimated figures.

Perhaps the factors that most strongly affect enrollment in higher education, broadly defined as post-secondary education, are the magnitude and concentration of population in a geographic area and the public willingness to support the institutions of education.

In discussing the enrollment picture, several broad influences need to be examined in detail. The general growth of population in the state and the increasing development of the economic basis for public education are two primary sources of predicting and planning information for higher education in Arizona.

Bearing in mind that facts require interpretation and evaluative judgment regarding their significance and that predictions decrease in validity as they become more remote from the past data on which they are based, the reader is invited to examine the background information and enrollment projections presented in this chapter. Although valuable economic background data (assessed valuations and retail sales) are presented in Chapter VI rather than here, it should be understood that these data were considered by the statistician when the projections presented herein were prepared.

The projections that are made are bounded in general by linear trend and exponential growth. In interpreting these data, the linear trend may in general be taken as a conservative estimate and the exponential trend as a high estimate. (Some exponential trend lines become unrealistic when projected for more than a few years.) It may be anticipated that the most probable values will fall within these boundaries.

By linear trend is meant the fitting of a straight line through a time series of numbers so that the sum of the squares of the vertical deviations from the trend values is less than the sum of the squared deviations around any other conceivable straight line. An exponential curve describes a series which is changing at a constant percentage. It is often referred to as a compound interest curve.

Study of the enrollment picture involves many issues and action aspects:

1. Development, change, reevaluation, and review of criteria for the establishment of junior colleges in Arizona.

2. The planning of size, enrollment capacity, and balancing of enrollment by attendance areas, the choice of location, and scheduling for the opening of new campuses.

3. Plans for the evolution of curricular programs and the growth of these in individual institutions.

4. Decisions concerning residence facilities and student transportation, as well as certain extended service activities in special cases.

5. Policies involving state-wide junior college districting.

6. Policies and agreements affecting in-district transfer students, out-of-district, and out-of-state students.

7. Methods of accounting for and records of classifications of enrollment.

8. Relations with the state universities in Arizona with respect to admissions, transfers, transfer of credits and educational programs.

9. Attention to accreditation matters.

10. Concern for curriculum specialization.

11. The academic preparation and timely supply of instructors and administrators in the Arizona junior colleges.

WHAT STATE POPULATION TRENDS SUGGEST

The statewide growth in population, when centered in 1950 census data and for the period 1940 to 1960, suggests a growth in population for the state of 5.6 percent per year. This may well be a minimum or lower limit. As an upper limit we may consider that growth could be as much as 5.8 percent and compounding year by year. The compound growth also is centered on the 1950 census. Insofar as school populations are a function of general population, a strong growth in school population for Arizona may be expected.

Looking ahead, however, to growth rates in numbers of high school graduates per year, the data presented below will show that the annual increases in numbers of high school graduates is almost double the growth rate in population. Between 1954 and 1965 high school graduates increased at a linear rate of 10.4 percent per year and with evidence suggesting a compound interest or exponential growth at a rate of 10.6 percent annually.

Table 2.1, Arizona: Total Population and Projection (1955-1980) is computed from census data for the years 1940, 1950, and 1960. Figure 2-1, Arizona: Total Population and Projection (1955 - 1980) summarizes graphically three forecasts. The lower straight line (linear trend) in the figure is based on the assumption of uniform growth in population without change in the basic conditions affecting population in the state. The upper curve is based upon evidence of past growth, suggesting that the population will increase in proportion to its magnitude at a given date. This assumption implies that the growth in state population accelerates rather than growing uniformly. The curve between these two boundaries is the population projection for Arizona made by the Committee on Long Range Planning of the Board of Regents of the Universities of Arizona (1966). The difference between the two upper curves is a difference in the assumed acceleration in population growth.

State population growth trends suggest that by 1970 the population of Arizona will be approximately between 2,000,000 and 2,250,000 persons; by 1975, the population will have increased to somewhere between 2,365,000 and 3,000,000; and by 1980, population of the state will have grown to between 2,721,000 and about 4,000,000 persons. This implies nearly a doubling of

TABLE 2.1

ARIZONA: TOTAL POPULATION AND PROJECTION (1955 - 1980)

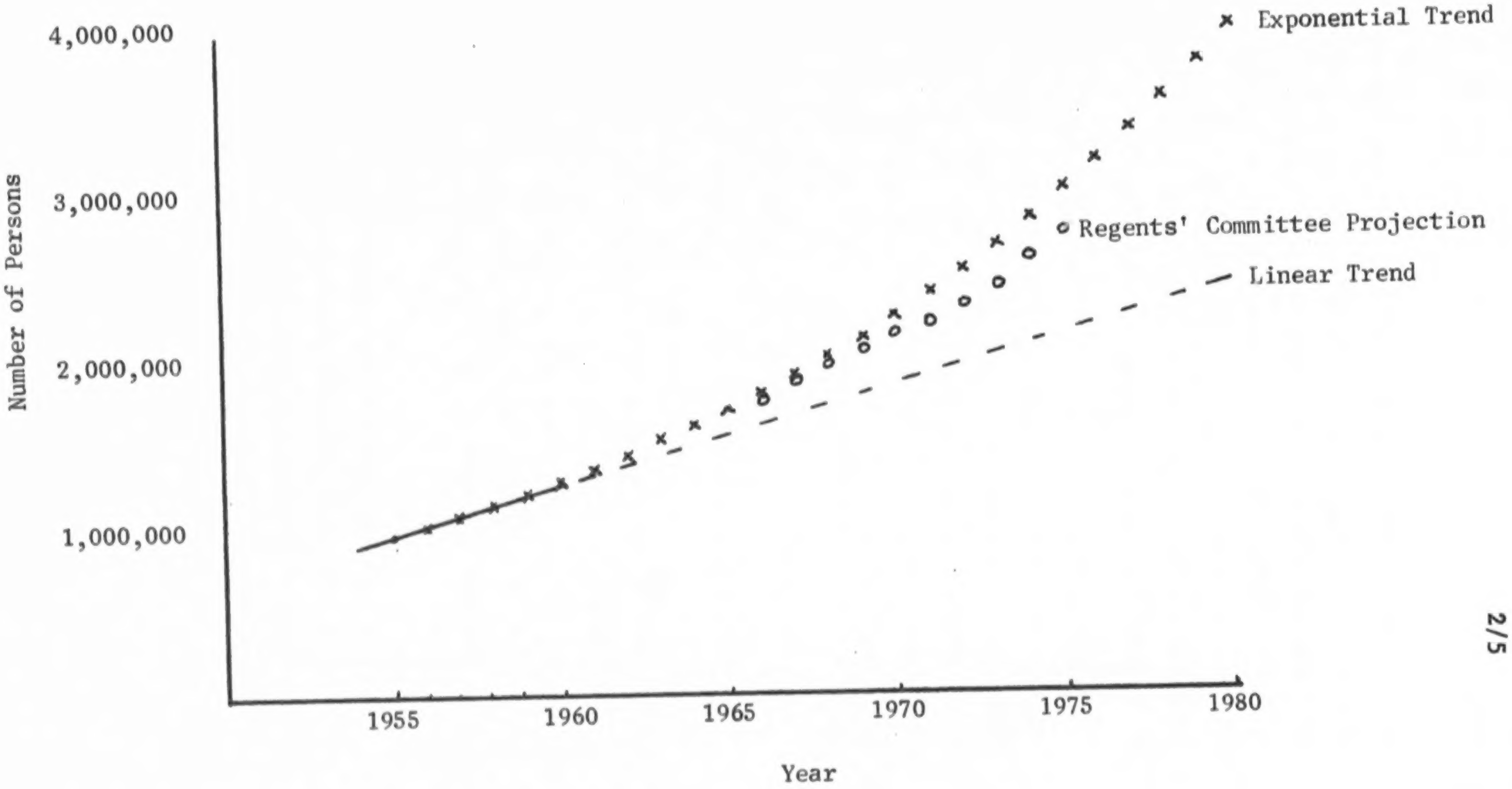
Year	Actual	Linear Projection[1]	Exponential Projection[2]
1955	965,000	943,748	965,800
1956	1,021,000	1,014,852	1,022,200
1957	1,078,000	1,085,956	1,082,000
1958	1,139,000	1,157,060	1,145,000
1959	1,207,000	1,228,164	1,212,000
1960	1,302,161	1,299,268	1,282,000
1961	1,371,000	1,370,372	1,358,000
1962	1,444,000	1,441,476	1,437,000
1963	1,519,000	1,512,580	1,521,000
1964	1,590,000	1,583,684	1,610,000
1965		1,654,788	1,704,000
1966		1,725,892	1,803,000
1967		1,796,996	1,909,000
1968		1,868,100	2,020,000
1969		1,939,204	2,139,000
1970		2,010,308	2,264,000
1971		2,081,412	2,396,000
1972		2,152,516	2,526,000
1973		2,223,620	2,684,000
1974		2,294,724	2,841,000
1975		2,365,828	3,007,000
1976		2,436,932	3,182,000
1977		2,508,036	3,368,000
1978		2,579,140	3,565,000
1979		2,650,244	3,773,000
1980		2,721,348	3,994,000

Source of actual figures: Research Department, Valley National Bank. Arizona Statistical Review. Phoenix, Arizona: September, 1966

1. $Yc = 1{,}263{,}716 + 35{,}552X$, where X = one-half year
2. $\text{Log. } Yc = 6.09586 + .01233X$, where X = one-half year

Figure 2.1

ARIZONA: TOTAL POPULATION AND PROJECTION (1955-1980)



population in the ten years between 1970 and 1980 if the growth is exponential. On the other hand, it would be conservative to assume the population would increase one-third in the same ten-year period. It is assumed that the growth in public education in the state will be in proportion to the population of the state. From the above it may be seen that the enrollment in Arizona junior colleges may be expected to increase very significantly during the next decade if educational opportunities are available.

The principal finding from these data of significance to the junior colleges in Arizona is the rate of population growth, as previously mentioned, between 5.6 percent and 5.8 percent per year. Because of the various conditions in the fourteen counties in the state, however, the county by county trends are necessary to a realistic picture of the state. These county trends are discussed below.

COUNTY BY COUNTY ANALYSIS

To get a general idea of how the population in Arizona has changed in the several counties of the state, United States census data for the years 1940, 1950, and 1960 were used as a factual basis for projections. It should be clearly understood that these projections are not built up in detail from vital statistics, net migration nor school enrollment data. Both linear and exponential trends lines were calculated on a county by county basis. The trends set the limits between which actual population totals are likely to be found.

For each county and for the cities of Phoenix and Tucson, tables and graphic representations were prepared showing selected actual census data and linear and exponential projections through 1980, based on the actual data. These tables and graphic representations have been placed on file with the state office of the Board of Directors for Junior Colleges. To summarize actual census data from the above-mentioned tables, Table 2.2 was made. This table shows that the change in population in Arizona counties from 1940 to 1960 ranged from a decrease of 855 persons in Mohave to an increase of 447,317 persons in Maricopa County. Thus, it may be seen that Maricopa County increased in population during the 20-year period in an amount nearly equal to the total state population as it existed in 1940. In fact, 59 percent of the state

TABLE 2.2

POPULATION OF ARIZONA COUNTIES 1940, 1950, AND 1960

Counties	Year			Change	Percentage
	1940	1950	1960	1940 to 1960	of Change
Apache	24,095	27,767	30,438	6,343	26.3
Cochise	34,627	31,488	55,039	20,412	15.9
Coconino	18,770	23,910	41,857	23,087	123.0
Gila	23,867	24,158	25,745	1,878	7.7
Graham	12,133	12,985	14,045	1,932	15.9
Greenlee	8,698	12,805	11,509	2,811	32.3
Maricopa	186,193	331,770	663,510	477,317	256.4
Mohave	8,591	8,510	7,736	-855	-10.0
Navajo	25,309	29,446	37,994	12,685	50.1
Pima	72,838	141,216	265,660	192,882	264.7
Pinal	28,841	43,191	62,673	33,832	117.3
Santa Cruz	9,482	9,344	10,808	1,326	14.0
Yavapai	26,511	24,991	28,912	2,401	9.1
Yuma	19,326	28,006	46,235	26,909	139.2
Totals	499,261	749,587	1,302,161	802,900	160.8

population growth during the 20 years occurred in Maricopa County. By comparison, Pima County accounted for 24 percent of the growth of the state and the other 12 counties contributed 17 percent of the population growth. The state as a whole increased 160.8 percent in population during the 20 years.

Table 2.2 also shows the county by county percentage of change in population between 1940 and 1960. In addition to Maricopa and Pima Counties, Coconino, Pinal and Yuma Counties show increases of well over 100 percent. Navajo County increased about 50 percent while all other counties, except Mohave, increased by percentages ranging from 9.1 percent to 32.3 percent. Mohave County, as it may be seen, experienced a decrease in population. These facts are of importance for junior college planning. Also of significance are the rates of growth.

As might be expected, the populous counties, Maricopa and Pima, have the highest rates of growth in population. Maricopa County is increasing in population at 6.1 percent per year linearly and 6.5 percent per year exponentially. Pima County is growing at a very similar rate, 6.0 percent per year linearly and 6.7 percent per year exponentially.

Yuma, Coconino, and Pinal Counties are a group of high growth counties. Yuma County has been growing in population by 4.3 percent per year linearly and 4.5 percent per year exponentially. Close behind are Coconino with a 4.1 percent per year linear growth and a 4.1 percent exponential growth and Pinal with 3.8 percent per year linear growth and 4.0 percent per year exponential growth.

Cochise County is growing with a 2.5 percent per year linear increase and a 2.3 percent per year exponential growth. Navajo County presents a similar rate of growth in population to Cochise County. This county is growing at a rate of 2.2 percent per year linearly and 2.1 percent per year exponentially. Greenlee, Apache, Graham, Santa Cruz, Gila and Yavapai are growing at rates of only 1.0 percent per year or less.

Mohave County, which has shown a decrease in population in past censuses, is in a state of so much change in basic conditions that no defensible forecast seemed feasible at this time.

WHAT STATISTICS ON HIGH SCHOOL COMPLETION INDICATE

Statistics on high school completion are a source of information more directly applicable to higher education in the state than is general background material on population and population growth. This is understandable inasmuch as the yearly output of high school graduates is a primary source of new enrollees in higher education.

To get a picture of the number of graduates from Arizona public high schools, Table 2.3 was prepared. This table gives a county by county tabulation of the number of students graduating from the public high schools for the years 1957 through 1967, inclusive. It may be readily seen that there has been a decided increase in the total number of such graduates during this period of years, in fact from 7,575 students in 1957 to 19,447 students in 1967. An average annual increase of 1,187 students.

In addition to the graduates from the public secondary schools, consideration must be given to those who complete Grade 12 in parochial and other private schools. From calculations made by Bureau personnel, it would appear that the above figures should be increased by about nine percent to account for these youth.

TABLE 2.3

DISTRIBUTION OF GRADUATES FROM PUBLIC HIGH SCHOOLS IN ARIZONA, 1957 - 1967, INCLUSIVE

	Years										
Counties	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967
Apache	94	83	125	120	166	158	179	210	262	290	310
Cochise	398	393	453	475	569	561	555	654	802	806	851
Coconino	166	198	244	312	341	354	371	383	481	494	518
Gila	257	256	281	279	262	337	313	342	411	389	380
Graham	115	153	142	142	184	153	149	184	200	209	223
Greenlee	171	180	196	192	216	226	180	188	241	202	206
Maricopa	3661	3990	4451	5226	6239	6397	6661	8271	10062	10079	10444
Mohave	50	61	44	53	62	75	74	77	131	138	156
Navajo	219	197	237	246	296	326	339	383	418	483	450
Pima	1383	1446	1771	2048	2303	2484	2554	3169	3624	3766	3764
Pinal	354	445	469	464	482	525	533	580	767	761	803
Santa Cruz	80	84	70	110	94	104	126	137	132	180	167
Yavapai	241	282	271	289	311	342	322	398	313	407	509
Yuma	386	391	437	450	532	482	482	586	706	673	666
Totals	7575	8159	9171	10406	12057	12501	12838	15562	18650	18877	19447

Source: Annual Report of the Superintendent of Public Instruction to the Governor of Arizona for 1956-57 through 1966-67, inclusive.

Increase in growth in numbers completing high school was more marked during the last half of the ten-year period than during the first half, that is, 6946 students compared to 4926. This is further illustrated by the exponential trend shown in Figure 2.2. These data form bases for predictions of what the future enrollments may be in junior colleges and other higher education institutions. Certainly there is every evidence of continued strong growth.

High school graduates are increasing in terms of rate of growth more rapidly than the total state population. Whereas the state population has been increasing 5.6 percent per year linearly and 5.8 percent per year exponentially, high school graduates statewide have been increasing 10.4 percent per year linearly and 10.6 percent per year exponentially. Therefore, high school graduates have been increasing in rate of growth almost twice as rapidly as state population.

Figure 2.2 shows projections to 1980 of the trends indicated by high school completions in Arizona during the past dozen years. The linear trend line suggests almost a doubling of numbers of high school graduates from public, parochial, and other private secondary schools during the period from 1966 to 1980. In fact, a 50 percent increase is shown by the year 1975. The exponential trend line, however, shows a doubling of all high school graduates by 1972 and a tripling by 1976. Exponential projections beyond 10 years are too hazardous to place confidence therein. The two trend lines may be considered as boundaries within which the actual numbers of high school graduates may be expected if past trends continue. Cohort survival studies presented later, however, provide evidence of a possible change in trends.

The ranges in projected numbers year by year are shown in Table 2.4. This table indicates, for example, that by 1970 there will be between approximately 24,000 to 32,000 graduates from all high schools in the state. The range increases, of course, as the exponential curve accelerates. Consequently, it is estimated that by 1975 there will be somewhere between 30,000 and 55,000 graduates if past trends continue.

As with census data so too with high school completion data, the preponderance of the population is in Pima and Maricopa Counties. Three-quarters of the high school graduates come from these two counties.

Figure 2.2

PROJECTIONS OF NUMBERS OF ARIZONA HIGH SCHOOL GRADUATES (1966-1980)

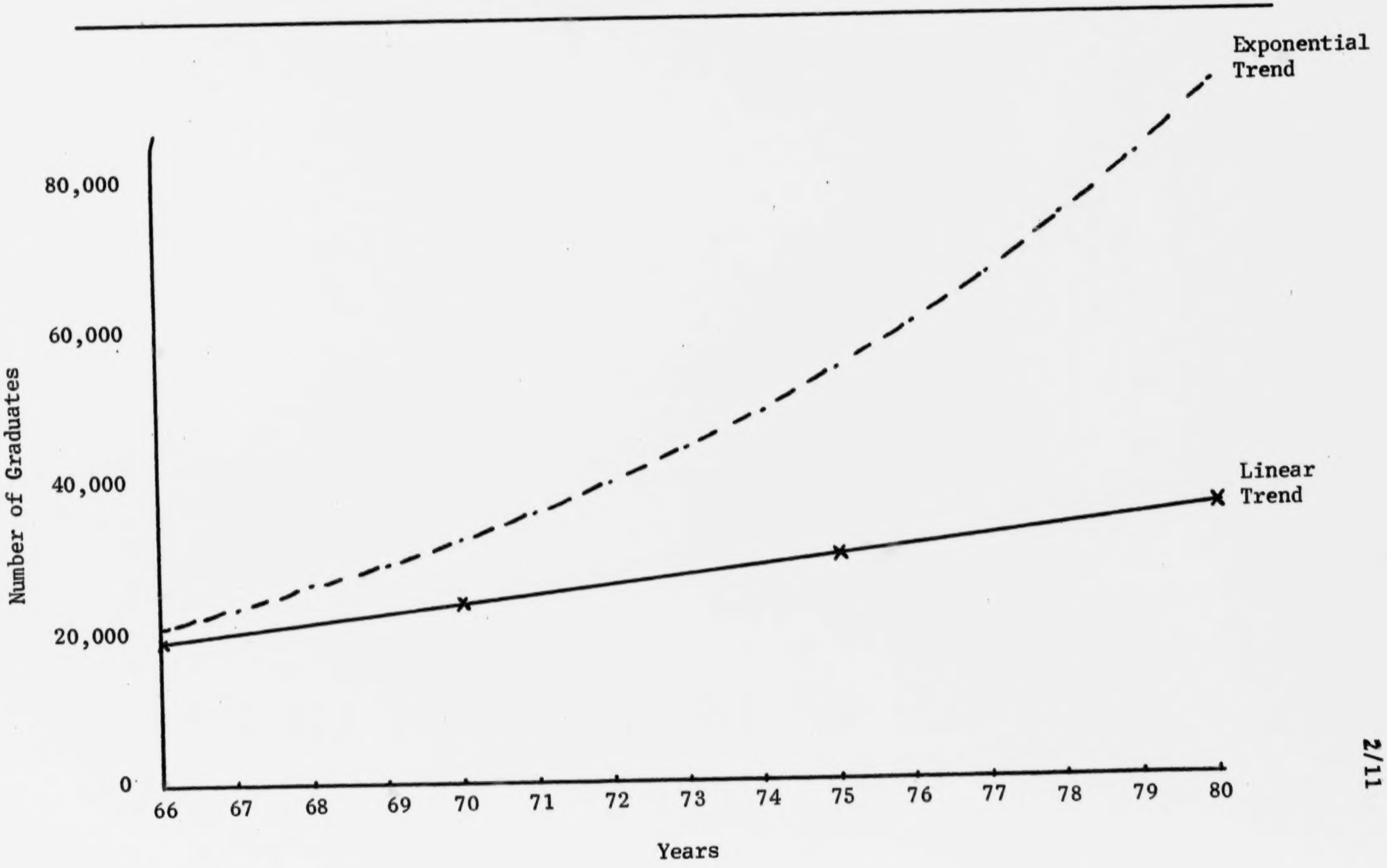


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TABLE 2.4

ACTUAL AND PROJECTED ARIZONA HIGH SCHOOL GRADUATES 1954 THROUGH 1980

Year	Actual	Linear Projection[1]	Exponential Projection[2]
1954	6,039	4,965	6,081
1955	6,934	6,163	6,752
1956	7,721	7,362	7,497
1957	8,329	8,560	8,324
1958	8,918	9,759	9,242
1959	9,988	10,957	10,261
1960	11,509	12,156	11,393
1961	13,198	13,355	12,650
1962	13,727	14,553	14,045
1963	14,104	15,752	15,593
1964	17,380	16,950	17,314
1965	20,834	18,149	19,225
1966		19,347	21,345
1967		20,546	23,700
1968		21,745	26,310
1969		22,943	29,220
1970		24,142	32,440
1971		25,340	36,025
1972		26,539	39,990
1973		27,737	44,400
1974		28,936	49,300
1975		30,134	54,730
1976		31,333	60,770
1977		32,532	67,470
1978		33,730	74,920
1979		34,929	83,180
1980		36,127	92,350

[1] $Yc = 11,556.75 + 599.28X$

[2] $\log Yc = 4.03393 + .02272X$

Source of data for the "Actual" column: Final Report to the Board of Regents of the Universities of Arizona to the Committee on Long Range Planning. April 1966.

The counties of Arizona are heterogeneous in regard to numbers of high school graduates. Just as the overview of state population was of general significance to higher education in Arizona, now an examination of county by county trends in number of high school graduates will highlight specific planning information on a local and regional basis.

In marked contrast to the picture of growth in population for the various counties, the most rapid growth rate in terms of high school graduates, as Table 2.5 indicates, is Mohave County. Here the data suggest a linear growth rate of 33.6 percent per year and an exponential growth of 38.8 percent per year.

TABLE 2.5

GROWTH RATES IN PERCENT IN HIGH SCHOOL GRADUATES
FOR COUNTIES (1959-1966)

	Growth Rates in Percentages	
County	Exponential	Linear
Apache	11.4	11.4
Cochise*	11.8	11.8
Coconino*	12.2	11.4
Gila	6.2	6.2
Graham*	15.8	15.0
Greenlee	0.4	0.8
Maricopa*	12.8	12.2
Mohave	38.8	33.6
Navajo	16.8	15.2
Pima*	6.0	5.6
Pinal*	8.0	8.2
Santa Cruz	12.4	11.8
Yavapai	10.0	9.2
Yuma*	7.8	7.8
Statewide	10.6	10.4

*These counties have public junior colleges or such institutions are authorized.

Navajo and Graham Counties are also experiencing very strong growth rates. The number of high school graduates in Navajo County has been increasing 15.2 percent per year linearly and 16.8 percent per year exponentially. Graham County is also experiencing a high growth rate, the increase being 15.0 percent per year linearly and 15.8 percent per year exponentially.

Maricopa County typifies the general rate of growth for another group of counties. The increase in number of high school graduates in Maricopa County is 12.2 percent per year linearly and 12.8 percent per year exponentially. Santa Cruz County is next. High school graduates are increasing there 11.8 percent per year linearly and 12.4 percent per year exponentially. Coconino County is encountering growth of 11.4 percent per year linearly and 12.2 percent per year exponentially. Cochise County shows high school graduates increasing 11.8 percent per year both linearly and exponentially. Yavapai County is increasing in high school graduates at 9.2 percent linearly and 10.0 percent exponentially.

Yuma, Gila and Pima Counties form a group with respect to rates of growth in high school graduates. Yuma shows a growth of 7.8 percent per year both linearly and exponentially. Gila is growing 6.2 percent per year both linearly and exponentially. Pima is growing 5.6 percent linearly and 6.0 percent per year exponentially. Pinal County is showing the highest growth in this group of counties with 8.2 percent per year linearly and 8.0 percent per year exponentially.

At least for the present, Greenlee County appears to have stabilized with respect to the number of high school graduates and shows 0.8 percent per year in linear growth and 0.4 percent per year in exponential growth.

Care should be exercised in attempting to interpret the significance of growth rates. A county may exhibit a high growth rate but this rate may be based on such small numbers of graduates that the increase in actual number of graduates from year to year may in fact be quite small. For example, Graham County has had a rather high secondary school graduation growth rate, but the increase in number of graduates from public high schools between 1957 and 1967 was only 108 students.

On the basis of these rates of growth in numbers of high school graduates, county by county projections have been made for the next few years. To prepare the projections time series, curve fitting techniques were applied to past data for each county. High school by high school, past numbers of graduates were considered and county trends were graphed.

Although these projections may be useful to those who are concerned with the administration of secondary education in the state, they are essential to planning for higher education in Arizona in the years to come. These statistics are too detailed to be discussed in full in this report. They will necessarily be discussed, however, in general when forecasts of future enrollments in higher education in Arizona are studied in the next section.

A summary of the county by county linear projections of numbers of high school graduates for the ten years 1968-1977, inclusive, is presented in Table 2.6. The grand total numbers of high school graduates by years are a summation of the projections for all 14 counties. They do not equal nor are they expected to equal the grand totals for either linear or exponential projections shown for the state as a whole in Table 2.4. It is interesting to note, however, that these totals in Table 2.6 do lie between the linear and exponential projection numbers given in Table 2.4. It may be noted that on the county by county summation basis, the high school completions are projected to go up from 23,850 in 1968 to 37,723 in 1977, a ten-year increase of 13,873 graduates - a very significant increase that higher education planners must consider.

If the linear projection should prove to be correct, Maricopa County alone will increase from about 13,350 graduates from all high schools in 1968 to 22,099 in 1977. This is an increase of 8,749 students. On this basis, by 1977 Maricopa County will have more graduates from secondary schools than the whole state had in 1967! All the counties show increased numbers of graduates, as the table makes clear.

The survey team decided to investigate the problem of the numbers of high school graduates in more depth. It was recognized that the graduates in the decade ahead are already in school and that a study of the trends in changes in numbers of students from grade to grade for the several counties and for the state as a whole might give another indication of what the future graduation picture will be.

Consequently, for each county the year-end public school memberships for each of the 12 grades for the school years 1957-1958 through 1966-1967 were obtained from the Annual Reports of the State Superintendent of Public Instruction. For each county these data were tabulated year by year and grade by grade. Next, the average percentage of numbers in year-end membership for each grade in the county as compared with the next preceding grade a year earlier was calculated for the years mentioned above. These percentages are referred to professionally as cohort survival rates; they are given in Table 2.7 for each county and for the statewide totals.

TABLE 2.6

TEN YEAR LINEAR PROJECTION OF ALL ARIZONA HIGH SCHOOL GRADUATES
BY YEARS AND BY COUNTIES (1968-1977)

County	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977
Apache	368	399	429	460	491	521	552	583	614	644
Cochise	943	1007	1071	1135	1199	1264	1328	1392	1456	1521
Coconino	636	680	725	770	814	859	904	948	993	1038
Gila	435	455	476	496	516	537	557	577	598	618
Graham	218	227	236	245	253	262	271	279	288	297
Greenlee	242	243	245	247	249	250	252	254	255	257
Maricopa	13350	14322	15294	16266	17239	18211	19183	20155	21127	22099
Mohave*	181	200	218	236	254	272	291	309	327	345
Navajo	570	617	665	712	759	806	854	901	948	996
Pima	4592	4791	4990	5189	5389	5588	5787	5986	6185	6384
Pinal	844	891	939	986	1034	1081	1129	1176	1224	1271
Santa Cruz	205	220	235	249	264	279	294	308	323	338
Yavapai	501	531	562	592	623	653	684	714	745	775
Yuma	765	806	848	890	931	973	1015	1057	1098	1140
Totals	23850	25389	26933	28473	30015	31556	33101	34639	36181	37723

*Note: Projections for Mohave County are contrary to past census data and reflect changing conditions in the county. An exponential projection for this county might be more valid.

TABLE 2.7

COHORT SURVIVAL RATES IN PERCENTAGES FOR YEAR-END MEMBERSHIPS FOR ARIZONA PUBLIC SCHOOLS 1957-1958 THROUGH 1967-1968, INCLUSIVE

	County														
Grades	Apache	Cochise	Coconino	Gila	Graham	Greenlee	Maricopa	Mohave	Navajo	Pima	Pinal	Santa Cruz	Yavapai	Yuma	Statewide
1 to 2	69	83	89	90	93	90	88	95	82	89	83	69	96	90	87
2 to 3	101	100	100	97	100	96	102	109	108	101	94	101	104	98	101
3 to 4	103	101	100	97	103	97	101	107	106	100	97	102	100	96	101
4 to 5	101	100	101	105	103	95	102	112	102	101	98	100	104	100	102
5 to 6	98	99	100	98	100	97	102	102	102	102	97	103	103	99	101
6 to 7	97	102	101	98	100	96	102	111	100	101	97	109	102	98	101
7 to 8	98	99	99	97	98	96	102	113	97	100	94	88	101	101	101
8 to 9	92	103	103	98	91	95	95	91	95	100	89	89	96	96	101
9 to 10	95	94	94	90	94	93	96	100	92	95	87	94	99	93	96
10 to 11	95	91	89	86	91	92	93	94	91	93	87	92	93	89	92
11 to 12	96	95	88	92	91	89	94	92	92	94	90	96	96	90	93

Many interesting observations could be made about the percentages listed in Table 2.7 For example, the low percentages of survival from Grade 1 to Grade 2 is probably an indication of many children being required to repeat Grade 1. The percentages above 100 percent probably reflect a tendency toward more "move-ins" than "move-outs." Also, the table shows much about the drop-out picture in high school. These matters are not the concern of this report, however, and the percentages are reported primarily to indicate the statistical basis upon which the projections shown in Table 2.8 were made.

The figures for this latter table were obtained by using the 1967 year-end memberships for grades 1 through 11 and projecting these memberships forward year by year into next succeeding grades on the basis of the cohort survival rates listed in Table 2.7.

A comparison of the figures in Table 2.8 with those in 2.6 shows for most of the counties and for the state total that the linear projections are somewhat above those obtained by the cohort survival technique. It should be kept in mind, however, that the totals listed in Table 2.8 are for public schools only. The important thing to observe is that both projection methods indicate a continuing upward trend in high school completions.

When the grade by grade year-end memberships for the spring of 1967 for the state as a whole were related to the statewide percentages (given in the column to the right in Table 2.7) the following Grade 12 year-end memberships for the years 1968 through 1978 were obtained for the public schools:

Year	Projection	Year	Projection
1968	20,960	1974	27,556
1969	22,083	1975	29,143
1970	23,143	1976	29,057
1971	25,169	1977	30,269
1972	26,265	1978	32,985
1973	26,769		

Neither these figures nor those in Table 2.8 take into account the hopeful expectation that progress through the grades in the schools in the years ahead will be much more steady for most students. Neither do the projections reflect a correction upward that would be needed if high school "drop-outs" could be significantly decreased. To these figures the numbers of graduates from private and parochial high schools should also be added. Therefore, it is predicted that the above projections will be found to be underestimates of Arizona's high school graduates

Table 2.8

ARIZONA COUNTY BY COUNTY COHORT SURVIVAL PROJECTIONS OF END OF YEAR PUBLIC SCHOOL MEMBERSHIPS FOR GRADE 12, 1968-1978, INCLUSIVE*

County	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978
Apache	342	372	372	414	493	437	502	517	513	590	593
Cochise	904	1057	1065	1184	1127	1260	1192	1328	1337	1354	1429
Coconino	548	554	597	630	620	644	633	650	653	656	688
Gila	406	427	413	379	381	368	353	390	382	409	382
Graham	233	248	278	248	238	253	242	271	248	258	243
Greenlee	250	208	199	192	219	169	166	169	146	142	132
Maricopa	11304	12112	12508	13046	13869	14380	14729	15624	15617	16242	19245
Mohave	170	193	213	285	281	305	377	404	453	481	513
Navajo	521	577	552	597	569	601	630	674	709	754	818
Pima	4265	4500	4752	4663	5010	4802	5095	5324	5397	5689	5614
Pinal	908	850	935	936	889	825	811	860	811	775	854
Santa Cruz	208	214	221	265	228	227	258	248	228	284	290
Yavapai	495	468	541	484	492	534	561	537	561	626	576
Yuma	707	730	747	790	814	783	857	859	845	841	919
Totals	21261	22510	23393	24113	25230	25588	26406	27855	27900	29101	32296

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* 1967 year-end memberships for grades 1-11 and Cohort Survival **Rates** shown in Table 2.7 used as the basis for this table.

even though the projections are of year-end memberships rather than of graduates from the public schools. The linear projections, presented earlier, and the cohort survival technique projections, presented above provide some of the background data needed for estimates of future enrollments in the junior colleges.

HOW THE JUNIOR COLLEGES ARE GROWING IN ENROLLMENT

Whereas the discussion up to this point has dealt with population and numbers of high school graduates, factors having a general influence upon junior college enrollments, we turn our attention now to the patterns of growth in the past of the Arizona junior colleges.

We examine first of all the first semester headcounts for recent years. These are shown in Table 2.9, entitled "October 1 Headcount Enrollments All Arizona Junior Colleges: 1963 Through 1967, Inclusive." This table gives the fall headcounts for Arizona Western College, Cochise College, Eastern Arizona College and for the Maricopa junior colleges as a group. It also shows the totals for all junior colleges for the years noted. The table indicates that all four junior college districts have experienced growth over the period of years shown. The most significant growth has been in Maricopa County, both in numbers and in

TABLE 2.9

OCTOBER 1 HEADCOUNT ENROLLMENTS ALL
ARIZONA JUNIOR COLLEGES
1963-1967, INCLUSIVE

	Year				
Junior Colleges	1963	1964	1965	1966	1967
Arizona Western	966	1634	1670	1809	1889
Cochise	--	1018	1215	1098	1352
Eastern Arizona	693	680	890	951	1034
Maricopa County Colleges	8704	12832	16224	18127	19460
Totals	10363	16164	20019	21985	23735

percentages of increase, while Arizona Western College ranks second. Both of these junior college districts doubled or more than doubled their numbers of students in the period from 1963 to 1967. It may be noted also, moreover, that Cochise College, which started with 1,018 students in the fall of 1964, had increased to 1,352 students by the fall of 1967, and Eastern Arizona College, which had 693 students in the fall of 1963, had increased to 1,034 students by the fall of 1967. Thus, as was said, all of the colleges have been growing.

When one looks at the totals for the junior colleges in the state as a whole, he sees that in 1963 there was a headcount enrollment of 10,363 students. This had increased in 1967 to 23,735 students or an overall increase of 13,372 students. Therefore it is evident that between the years 1963 and 1967, the headcount enrollments in the junior colleges went up more than what the enrollment was in total in 1963.

As was noted above, the enrollments that have just been discussed were for the first semester. It was decided by the survey team to see what the spring enrollments for the same years also had been. By so investigating this matter, a comparison between the spring and fall enrollments would be possible. Table 2.10 shows the picture for the spring semester of each of the years; it will not be discussed in detail here. The significant thing we would point out is the similarity of growth in the spring as compared to the fall. The reader, in trying to make comparisons between spring and fall enrollments should be careful that he is considering the same school year; that is, if he wishes to compare the enrollment for the fall of 1963 with the correct spring enrollment, he should look in Table 2.10 for the spring enrollment for 1964. For example, the enrollment that fall, 1963, was 10,363 while the spring of 1964 was 13,972, a remarkable 35 percent increase. In the spring of 1965 when the enrollment was 17,771 it may be noted that the increase was not so great, only 10 percent, over the fall of 1964 when the enrollment was 16,164. The 1965 fall enrollment was almost as high as was the 1966 spring enrollment. For some reason or other, the spring enrollment of 1966 increased only 796 students. In the following school year, moreover, there was a drop in enrollment from fall to spring of 228 students. The important fact that these data indicate is that the junior colleges really are full-year institutions. They also indicate a growth rate that has been so fast that until recently the spring headcount enrollments have exceeded fall enrollments. This is not typical for higher education institutions.

TABLE 2.10

SECOND SEMESTER HEADCOUNT ENROLLMENTS
ALL ARIZONA JUNIOR COLLEGES
1963-1967, INCLUSIVE*

	Year				
Junior Colleges	1963	1964	1965	1966	1967
Arizona Western	--	752	1042	1286	1485
Cochise	--	--	869	957	998
Eastern Arizona	572	603	598	784	886
Maricopa County Colleges	10032	12617**	15202**	17788	18388
Totals	10604	13972	17711	20815	21757

*Source: Arizona Statistical Review, September 1966 and September 1967 for Arizona Western, Cochise, and Eastern Arizona Colleges.

**Interpolated figures, actual figures not available.

The Arizona junior colleges are not the only higher education institutions in Arizona that are showing significant growth. This is seen from the data that are presented in Table 2.11. This table shows what happened in the spring enrollments in the four-year colleges and universities as well as in the junior colleges for the years 1963 through 1967, inclusive. Spring enrollments have been used for these comparisons because such enrollments for most institutions were readily available in the Arizona Statistical Review.

The table points out two or three main ideas, one of which is the fact that every type of institution that has been in operation during the full period of years indicated in the table has experienced continuing and significant growth year by year. Secondly, it may be seen that the institutions other than the junior colleges increased in headcount enrollment from 37,898 in the spring of 1963 to 53,400 in the spring of 1967, an overall increase of 15,502 students. During that same period of time, the junior colleges in the state increased from 10,604 to 21,757 or an overall increase of 11,153 students. Thus, it may be seen that the junior colleges, from a relatively small beginning, increased in actual headcount enrollment nearly as much as the universities and other higher education

TABLE 2.11

SPRING SEMESTER HEADCOUNT ENROLLMENTS IN ARIZONA COLLEGES AND UNIVERSITIES 1963-1967, INCLUSIVE*

	Year				
Institution	1963	1964	1965	1966	1967
Arizona State University	15434	17322	18921	21728	22145
Northern Arizona University	3560	4012	5071	6349	6524
University of Arizona	18185	19994	21213	22342	23655
Grand Canyon College	464	510	502	515	580
American Institute for Foreign Trade	255	258	317	397	426
Prescott College	--	--	--	--	70
Totals	37898	42096	46024	51331	53400
All Junior Colleges	10604	13972	17711	28815	21757
Grand Totals	48502	56068	63735	72146	75157

*Source (except for junior colleges): Arizona Statistical Review: September 1966 and September 1967.

institutions. Of course, the percentage of increase for the junior colleges as a whole was much more than for the other institutions considered collectively. Finally, it should be noted that as a group, all the higher education institutions in the state went up the rather astonishing amount of 26,665 students between the spring of 1963 and the spring of 1967. This was a 55 percent increase in that short period of time, that is, nearly 14 percent per year.

The next matter of concern was to ascertain whether or not the full-time student equivalent picture was the same as that for the headcount situation. Therefore, Table 2.12 was prepared on the full-time student equivalents for the years 1963 through 1967, inclusive. As might be expected, the table shows the pattern of continuing growth that was indicated in Table 2.9. The details of the situation are rather self-evident through an examination of the table. There is something that is significant that the table does not readily point out, however, and that is that the FTSE total went up from 5,741 in 1963 to 15,615 in 1967, a total increase of 9,974 students. Percentagewise this was found to

TABLE 2.12

ALL ARIZONA JUNIOR COLLEGES: FULL-TIME STUDENT EQUIVALENTS (FTSE), OCTOBER 1, BY YEARS 1963 THROUGH 1967, INCLUSIVE*

	Year				
Institution	1963	1964	1965	1966	1967
Arizona Western College	536	953	1134	1333	1309
Cochise College	---	567	824	811	929
Eastern Arizona College	629	654	858	942	1010
Maricopa County Junior Colleges	4567	7134	9411	10966	12367
Totals	5741	9308	12227	14052	15615

*Source: Annual Report of the Arizona State Board of Directors for Junior Colleges, 1963-1964 through 1966-1967, inclusive.

be a 173.73 percent increase over the four-year period indicated on the table. By comparison, the percentage of increase in headcount was 122.55 percent. This then means that the percentage of increase in FTSE is much more rapid than for headcount. In other words, we have here an indication that students were carrying more semester hours of credit on the average at the end of the period than they were at the beginning. This is further indication of the acceptance of the junior colleges by the public. This trend is important from the standpoint of the financing of the junior colleges inasmuch as junior college finance is based on the FTSE. A continuation of this trend would lead to a prediction of heavier student loads in the junior colleges in the years ahead than an examination of the potential for headcount alone might otherwise indicate.

WHAT THE NATIONAL PICTURE SUGGESTS

The National picture provides a great deal of useful information for the administration and evaluation of junior colleges in Arizona.

1. In 1966, the median size public junior college in the United States had an enrollment of about 1,500 students. One-fourth of all public junior colleges had enrollments of less than 600 students. Only about 21.5 percent of the schools enrolled 3,000 or more students and only 10 percent of the institutions enrolled over 5,000. These facts may be noted in Table 2.13.

TABLE 2.13

DISTRIBUTION OF SIZE OF ENROLLMENT IN PUBLIC JUNIOR COLLEGES NATIONWIDE IN 1966

Enrollment	Number of Colleges*	Cumulative Frequency	Percentile Rank
1 - 99	3	3	.53
100 - 1,199	15	18	3.18
200 - 299	20	38	6.72
300 - 399	33	71	12.56
400 - 499	39	110	19.46
500 - 599	34	144	25.48
600 - 699	28	172	30.44
700 - 799	33	205	36.28
800 - 899	25	230	40.70
900 - 999	22	252	44.60
1,000 - 1,999	131	383	67.78
2,000 - 2,999	61	444	78.58
3,000 - 3,999	27	471	83.36
4,000 - 4,999	31	502	88.84
5,000 - 5,999	10	512	90.61
6,000 - 6,999	8	520	92.03
7,000 - 7,999	3	523	92.56
8,000 - 8,999	11	534	94.51
9,000 - 9,999	7	541	95.75
10,000 & Over	24	565	99.99

*Source of Number: 1967 Directory, American Association of Junior Colleges, p. 63.

By comparison, Arizona Western College in 1966, with an enrollment of 1,809 students, was as large or larger than 63 percent of the two-year institutions nationwide; Cochise College was at the 47th percentile, and Eastern Arizona College was at the 44 percentile in enrollment size. If the Maricopa County junior colleges had at that time been stabilized at 5,000 enrollment each, they would have been in the upper 10 percent enrollmentwise in the nation.

2. Despite the large growth in junior college enrollments in Arizona, relative to Florida and California experience, in 1965 the proportion of all college students attending junior colleges in Arizona was somewhat small. In

Florida, 75 percent of all freshmen and sophomores attend junior colleges; in California, 80 percent do so; in Arizona the proportion in 1965 was about 50 percent. Table 2.14 illustrates this latter fact.

3. The National experience provides valuable information concerning the composition of junior college student bodies.

TABLE 2.14

FRESHMEN AND SOPHOMORE ENROLLMENTS IN ARIZONA COLLEGES AND UNIVERSITIES

Year	Enrollments Freshmen and Sophomores at Arizona Universities	Enrollments Freshmen and Sophomores at Arizona Junior Colleges	Grand Total	Junior Colleges as Percent of Total
1960	11,549	6,396	17,945	35.64
1961	13,217	7,282	20,499	35.52
1962	15,051	8,034	23,085	34.80
1963	15,938	10,363	26,301	39.40
1964	17,526	16,164	33,690	47.97
1965	20,594	20,019	40,613	49.29

A comparison of national average data versus that for Arizona junior colleges is summarized in Table 2.15. A main item revealed by the table is that Arizona full-time freshmen students (except for those at Phoenix College) are a larger protion of total enrollment than is true nationally.

Sophomore enrollment tends to be much less than that of freshman. In Arizona the percentages that sophomore enrollments were of freshmen enrollments for 1965-1966 were as follows:

Arizona Western	25 %	Glendale	24 %
Cochise	20	Mesa	21
Eastern Arizona	26	Phoenix	18

Statewide, sophomore enrollment was about 20 percent of the freshman enrollment. This compares with 35.1 percent nationally for 1965-1966. Here we have an indication that larger sophomore enrollments may be anticipated in Arizona junior colleges in the future.

TABLE 2.15

STUDENT BODY COMPOSITION IN PERCENT OF TOTAL ENROLLMENT: NATIONAL DATA VERSUS ARIZONA JUNIOR COLLEGES DATA*

	1965 National Data	AWC	Cochise	EAC	Glendale	Mesa	Phoenix	State-wide
Full-time								
Freshmen	34.9	40.3	44.2	68.2	59.8	60.1	21.3	32.9
Sophomores	13.2	10.0	8.1	20.6	14.6	14.2	7.5	9.5
Unclassified	1.1	.8	-.-	-.-	.7	-.-	-.-	.2
Part-time								
Freshmen	25.3	29.0	4.8	11.2	19.9	22.0	62.6	46.9
Sophomores	7.9	7.2	1.7	-.-	4.7	3.2	7.8	6.4
Unclassified	17.6	12.6	41.1	-.-	.2	.4	.8	4.1

*First Semester 1965-1966

4. 70 to 75 percent of entering students nationwide are, in fact, terminal students[1]. This suggests then that 25 to 30 percent of entering students will transfer to universities after matriculating in junior colleges.

5. Eighteen - to 21-year-olds represent from 60 to 70 percent of the student body in junior colleges. Thus, 30 to 40 percent of the students in the institutions belong to older age categories. These facts may be interpreted to suggest that junior colleges provide a very significant opportunity for adult members of a community.

HOW DISTANCE FROM CAMPUS AFFECTS ENROLLMENT

In counties where centers of population are widely scattered, the problem of site selection requires the most careful study. Data provided by Cochise College supply some valuable guidelines for decisions as to site selection in such counties.

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[1] J. W. Thornton, The Community College, 2nd edition, John Wiley & Sons, Inc., New York. 1966.

About 85 percent of the students admitted from within Cochise County commute to school. They travel from as far as 50 miles away. Boarding students comprise 16 percent of the in-county students. Those who live about 50 miles away are the ones who make maximum use of dormitory facilities. The use declines both below and above this distance. Residence is an attractive opportunity to students who live between 25 and 85 miles from the college. Comparable data from Arizona Western College and Eastern Arizona College are not immediately available, but should be analyzed in order to supply a sound basis for future decisions on both site selection and the provision of residence halls.

These data also provide a means of estimating the weekly travel costs of commuting to the college. It turns out that miles are about equal to dollars, when mileage is evaluated at 10 cents per mile and five round trips are assumed per week. Thus an individual student commuting 50 miles would be spending, in effect, 50 dollars per week for gas, oil, depreciation, insurance, license fees, maintenance and other costs.

Figure 2.3 shows an interesting condition about admissions to Cochise College relative to commuting distance and the use of college residence halls. The next figure, Figure 2.4, gives an indication of what the effect of distance was on the percent of high school graduates who attended Cochise College from some of the populated areas in the county. The latter figure shows a negative correlation between the percentage of graduates entering from a given school and the distance that that school is from the college. No data are available as to the possible provision of some form of college transportation as an alternative to residence facilities.

The effect of distance upon the proportion of graduates from a given high school who will attend a junior college is very strong. Beyond 25 to 30 miles attendance by high school graduates falls off markedly.

In congested metropolitan areas, of course, distance may be less relevant as a factor. Under these conditions, the time required between origin and destination will be the more significant variable.

It is assumed that these factors will affect all categories of students equally. However, no data are presented to study the possible differential effects of distance or time of travel upon full-time and part-time students.

Figure 2.3

RELATIONS BETWEEN PERCENT OF ADMISSIONS AND COMMUNITY DISTANCE; ALSO, PERCENT OF ADMISSIONS AND RESIDENCE FACILITIES COCHISE COLLEGE, SPRING 1968

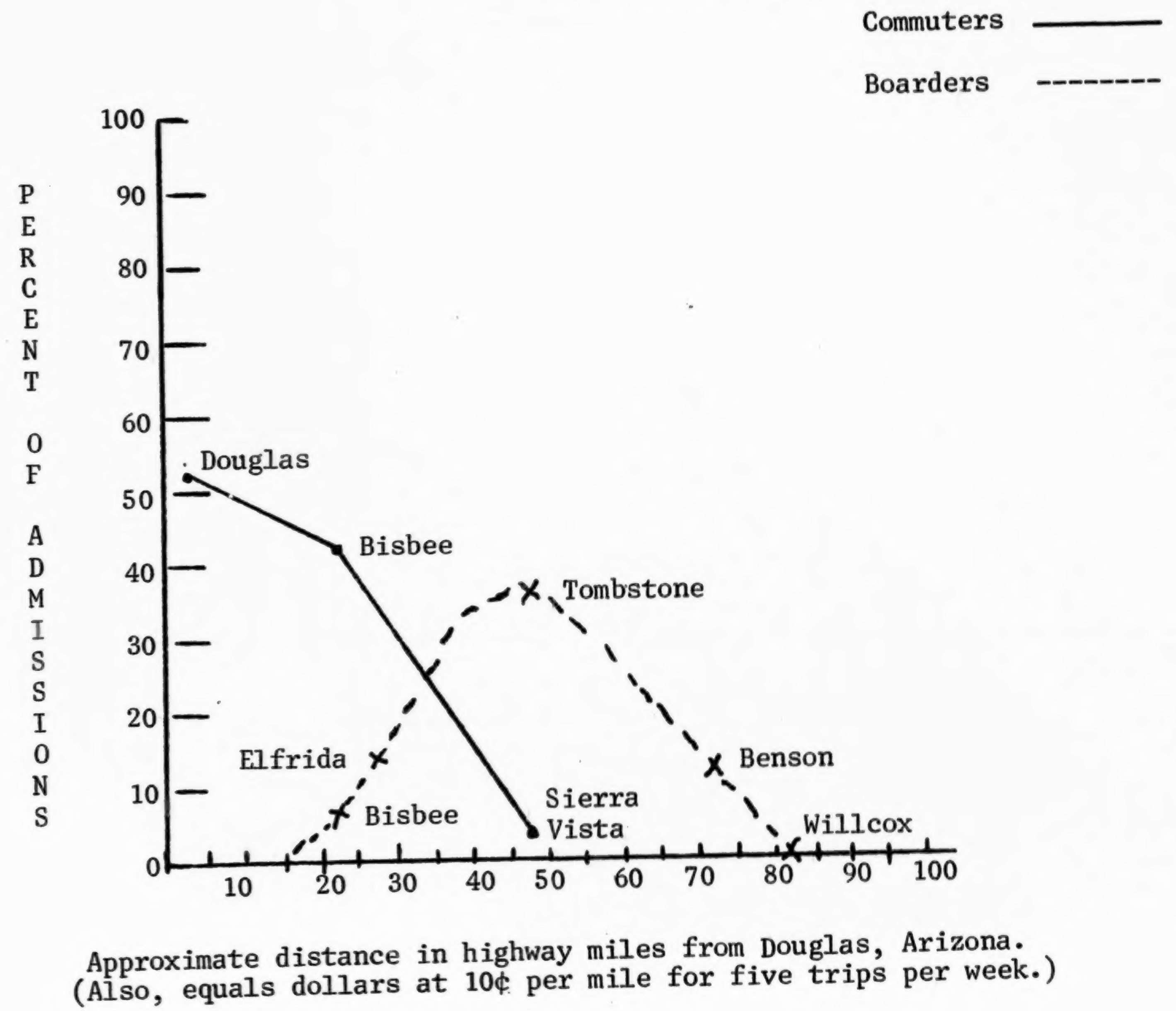
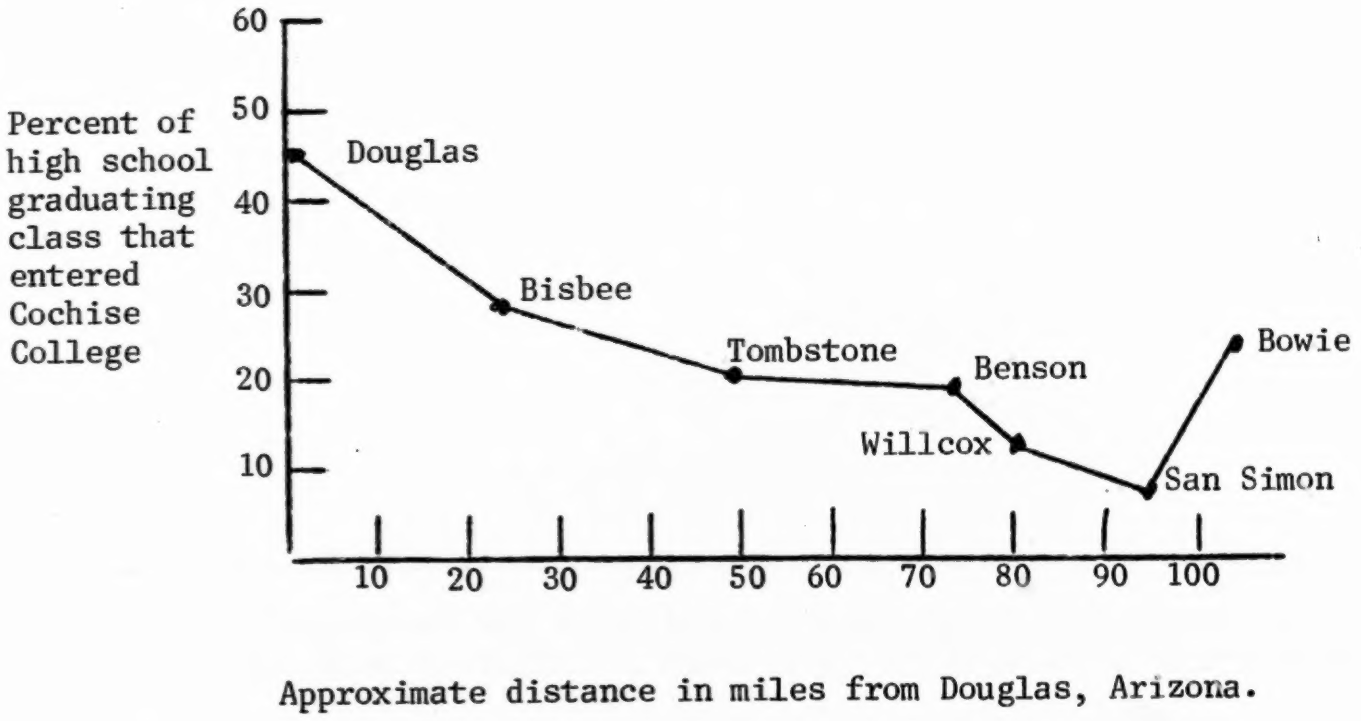


Figure 2.4

RELATIONSHIP OF DISTANCE FROM COCHISE COLLEGE TO PERCENTAGE OF 1967 HIGH SCHOOL GRADUATES WHO ENTERED THE COLLEGE AS FRESHMEN IN THE FALL OF 1967



The provision of residence facilities at a junior college, of course has a strong effect upon the percentage of high school graduates who will enroll. It is questionable, however, whether such facilities would enhance the availability of collegiate education to the 30 percent who would be in the adult student classification (adult members of the community who would profit from the offerings of the college if it were closer at hand).

The Cochise College data indicate that beyond 40 to 50 miles the proportion of high school graduates, who will be attracted to the college, can be raised from 10 percent to 20 percent, if residence facilities are provided. Even when residence facilities are provided, however, the decline in the proportion enrolling is rapid as a function of distance.

WHAT A PREVIOUS PROJECTION OF ENROLLMENTS FOR EXISTING JUNIOR COLLEGE DISTRICTS INDICATES

Subsequent to the acquisition of actual headcount enrollments and FTSE data for the 1966-67 school year, projections of these two kinds of data were assembled by the State Office for the State Board of Directors for Junior Colleges. These projections for the existing operating districts are reproduced in Table 2.16. Although these projections do not necessarily represent actual conditions today, they do give general indications of what the immediate future has in store.

These estimates for the five-year period are another sign of the continued growth that may be expected. According to this 1967 projection, 37,320 students may be enrolled by 1971-72, and they may equal a FTSE of 23,424. All schools show continuing upward trends. These trends are reflected in the projections made by the survey team as may be noted later in this chapter.

HOW NEWLY FORMED JUNIOR COLLEGE DISTRICTS EXPECT TO GROW

In harmony with good planning procedure, the newly formed junior college districts (Pima, Pinal and Yavapai) have had projections of future enrollments prepared for them. Some of the projections have been published and from among these the survey team selected certain of them to illustrate what the new districts anticipate. The selected projections have been assembled in Table 2.17. They are not

TABLE 2.16

A 1967 PROJECTION OF HEAD COUNT AND FTSE FOR ARIZONA JUNIOR COLLEGES (1967-1972)

	Arizona Western College	Cochise College	Eastern Arizona College	Maricopa District	Totals
HEADCOUNT ENROLLMENT					
1967-68	2,100	1,175	1,200	21,675	26,150
1968-69	2,310	1,250	1,320	23,500	28,380
1969-70	2,650	1,200	1,320	26,050	31,220
1970-71	2,910	1,250	1,380	28,600	34,140
1971-72	3,340	1,300	1,430	31,250	37,320
FULL-TIME STUDENT EQUIVALENTS					
1967-68	1,420	823	1,100	12,871	16,214
1968-69	1,560	875	1,220	14,094	17,749
1969-70	1,790	840	1,220	15,721	19,571
1970-71	1,960	875	1,280	17,263	21,378
1971-72	2,250	910	1,430	18,834	23,424

placed here to represent what current thinking among administrators and board members may be relative to future enrollments. They do, however, provide a general indication of how they expect the FTSE and headcounts to grow. Also, it should be understood that the figures given represent possible conditions in the districts if, and only if, the colleges were established and in operation on the dates given. It should be noted that the Pima County figures are one set of projections (Conservative Projection A) among four that are provided in the source cited.

It is noteworthy that by the 1973-74 school year these districts will be providing a junior college opportunity within their counties for approximately 6600 students in FTSE and 9400 in headcount if these projections are valid. Thus we see another indication of the continued growth to be anticipated in Arizona junior colleges.

TABLE 2.17

ENROLLMENT PROJECTIONS FOR NEWLY FORMED JUNIOR COLLEGE DISTRICTS AS REPORTED IN SELECTED PUBLICATIONS* FOR OR BY THESE DISTRICTS

	F.T.S.E.				Head Count			
Year	Pima	Pinal	Yavapai	Total	Pima	Pinal	Yavapai	Total
1968-69	2465	-	546	3011	3500	-	803	4303
1969-70	2965	635	583	4183	4210	952	857	6019
1970-71	3480	654	619	4753	4942	981	910	6833
1971-72	4020	673	605	5298	5708	1010	889	7607
1972-73	4585	693	636	5914	6511	1040	936	8487
1973-74	5176	714	675	6565	7350	1071	992	9413
1974-75	5320		664		7554		997	
1975-76	5464		675		7759		992	
1976-77	5657				8033			
1977-78	5850				8307			
1978-79	6044				8582			
1979-80	6236				8855			

* Pima County -- A Study of Community College Possibilities in Pima County, Arizona, The Arizona State Board for Junior Colleges and the Pima County Junior College Planning and Development Committee, June 1966, p. 190 (Conservative Projection A).
Pinal County -- A Five-year Projection and Request for Approval to Plan Physical Facilities for Central Arizona College, Central Arizona College Administration and Board of Directors, October 1967, p. 18.
Yavapai County -- Yavapai County Junior College Survey, Northern Arizona University, August 1966, p. 42.

HOW UNIVERSITY DEVELOPMENTS MAY AFFECT JUNIOR COLLEGE TRENDS

Just as the growth of individual junior colleges is influenced by the establishment and development of other similar institutions, so too are they affected individually and as a group by university developments. Planners of the future for the two-year institutions need to be kept apprised of changes being made or to be made in the universities.

An important area of concern to the junior colleges is that of changes in educational programs in the universities. Additions or deletions of semi-professional and technical curriculums by the four-year institutions - for example, aviation technology - immediately modify the need for such curriculums in the two-year schools. If vocational education - considered in the narrow sense of skill training for rather specific work - were to be a feature of education in a given university, the need for such educational opportunities in junior colleges (at least those nearby) would need to be carefully analyzed.

Another aspect of university educational programs of interest to junior colleges is extension courses. Unless there is coordination of extension course offerings between the two types of institutions here being discussed, with each making available what it is best prepared to present (considering the level of instruction, professional staff, instructional materials, and logistical problems), unwarranted competition would be possible. An illustration of cooperative arrangements may be seen where upper-division or graduate level extension courses are offered by universities in junior college facilities.

In addition to the above program changes, the junior colleges have the problem of keeping abreast of changes in lower division course prerequisites for university upper division courses and major and minor fields. The availability in a junior college of the needed lower division courses is an important factor influencing the decisions of potential transfer students on whether or not to enroll in two-year institutions as a beginning in higher education. Changes in university educational programs, then, may be seen as often having direct influences upon junior college enrollments.

The extent to which such changes would modify junior college enrollments would be a study involving so much detailed analysis that it is beyond the scope of this report. Of equal interest and concern would be an examination of how junior college educational programs and enrollments are going to affect the universities!

Some persons have asked what effect changed entrance requirements to the universities would have on junior college enrollments. At the present time Arizona universities are not particularly restrictive in the admission to freshman standing to residents of the state. Generally speaking, if students present an acceptable program of secondary school subjects and rank in the upper three-quarters of their graduating class, they are granted regular admission after having complied with certain routine procedures. For those who were in the lower one-fourth of their graduating class in high school, admission is more difficult but possible. For example, at The University of Arizona such individuals may be admitted to the Division of Continuing Education for a maximum of nine units of class work each semester in the late afternoon or evening. As stated in the university catalogue, "Upon completion of 15 units of course work taken in the Division of Continuing Education, including English 1, with a satisfactory grade average, such students will be granted regular admission to one of the colleges of the University."

From the above it may be seen that if changes in admission policies were to be made, such changes would very likely be in the direction of more selectivity. Stated another way, admission would be restricted to those with higher academic ranking than is now the case. This, then, would mean that students in the lower rankings in their graduating classes would have to seek admission to other institutions of higher education such as junior colleges.

Through contact with university personnel who do institutional research, it was determined that only about 1,800 of the freshmen admitted to Arizona universities for the first semester of 1967-68 were in the lower 50 percent of their high school graduating classes. If the universities had restricted admissions to students in the upper half of their graduating classes, these 1,800 youth may have been potential candidates for admission to the junior colleges. The above information about entrance requirements makes it a bit difficult to conceive of changes meaning anything but heavier enrollments in the junior colleges. The increases, however, would not constitute a serious problem for the junior colleges.

Another aspect of university development that would influence junior colleges is the possibility that a given university might be authorized to establish what have been called satellite campuses. If this were to be done, it is not unreasonable to expect that there would be some slowing down of the rate of growth of enrollments in the junior college districts within which satellite campuses were established. Perhaps the general education and the liberal arts offerings in the two-year schools would be the programs that would be affected. The survey team has not felt that presently established two-year colleges would be adversely affected by university satellite campuses. A time-table for the opening up of new junior colleges might be set back somewhat, however. It should ever be kept in mind, though, that true community colleges serve many functions and that ofttimes two-year and four-year schools complement one another.

ENROLLMENT POSSIBILITIES IN THE YEARS IMMEDIATELY AHEAD

In this final section of Chapter II some enrollment possibilities for the next few years are given. They are termed possibilities rather than probabilities because there are so many factors that may affect the future enrollment picture. Among them are the following:

1. Changes in the socio-economic composition of a community. It is a fact of general applicability that educational institutions and the opportunities they provide for education to members of the community are most strongly supported by middle class groups.

2. Changes in the occupational characteristics of a community. The rise or decline of certain businesses or industries in a community have a great impact upon the schools located there. These factors influence the size and concentration of the population in the area and have a marked effect upon the characteristics of the community members. This is particularly true of junior colleges or community colleges and the effect is not limited to the numbers who may enroll but also manifests itself in influencing the curriculum that is offered.

3. Changes in the economy of the state and the nation. The growth of trade, industry, and government in the state, neighboring states, and the nation affect the magnitude and kind of education offered. It is a fact that economic and social mobility transcend state borders and that many persons who obtain an education in this state may ultimately relocate elsewhere for economic and other reasons. It is desirable that Arizona's citizens be well prepared to play a role in the economic, social, and cultural life of the nation.

4. Changes in nationwide programs. The requirements of national defense vary from time to time. Not only are enrollments affected in their magnitude by the circumstances and policies of national defense, but also enrollment is affected in its composition by such circumstances. The offerings of colleges may vary in time of war or national emergency by reason of the preponderance of men or women that may accompany these conditions.

5. Changes in Federal programs at the local level. It is a fact, for example, that the social and economic characteristics in a local community or region can be suddenly affected by changes in the size or characteristics of adjacent military installations.

6. Changes in the direction and magnitude of growth of residential areas. New suburbs or extensions of city limits to include larger areas may call for realignment of metropolitan junior college attendance districts.

7. Changes in transportation, streets, highways, and freeways. The accessibility of, and travel time to and from a junior college may have effects upon enrollment.

8. Changes in community acceptance. It takes time for a community college to gain full acceptance. As time passes not only does the new school adapt to its community environment, but also in time the community learns to value and to make increasing use of the college as an integrating and focusing factor in major aspects of community life and functioning. This gain in acceptance over a period of time is not only from interested youth and adults but includes the acceptance and support of school administrators, counselors and teachers and leaders in other community institutions.

9. Changes in the community due to the existence of a college in the community. It is traditional in American life that the presence of a college in a community is considered an asset in terms of community growth and prosperity. The interaction in turn affects enrollment in the college.

10. Seasonal changes. It is well known that enrollments vary from fall to spring.

11. Changes in special programs. Enrollments are affected by the existence of day, night, and summer programs. Also, additions of strong course offerings and specialized curriculums may significantly increase enrollments.

12. Differences in social and geographical factors. Some special factors affect enrollments in particular cases. Some communities offer greater social attractions than others. Some communities are particularly favored by ammenities, such as lakes, mountains, and winter resorts.

13. Variations in alumni support and strong regional significance. Certain schools benefit from a strong regional support from alumni and other interested persons. These schools benefit from special groups which support their enrollments. Other schools may not achieve the level of enrollment expected on general grounds because of special regional and cultural factors.

14. Changes in residence facilities or transportation. The existence of residence facilities in colleges located in counties in which population centers in scattered towns has an effect upon enrollment, enrollment composition, and the need for extension offerings at a distance from the main campus.

15. Changes in the facilities, physical plant, parking areas, programs, and instructional staff. The attractiveness, capacity, accessibility, and earned reputation of an institution affect its enrollments.

16. Changes in out-of-state educational offerings. A significant proportion of Arizona high school graduates who attend college are attracted to out-of-state schools. Changes in conditions in other states have a reactive effect upon higher education in Arizona.

17. Changes in programs undertaken by the state universities. The state universities may continue, discontinue, or initiate new programs in areas also considered by the junior colleges. This is particularly likely in areas of special technology such as aviation, medical related occupations, or computer technology. Such essentially competitive factors need not be fatal to either junior college or university plans. The growth in state population and in numbers of high school graduates may well justify a considerable degree of overlapping curricula, and this need not be considered duplication.

18. Changes in programs of vocational education by high schools. Junior colleges may expect to be pressed by other educational institutions for a good many years in the area of vocational education. Trends in other states, particularly California, suggest that the junior colleges may expect an increasing role in the more skilled and more technical aspects of vocational education. The junior colleges, being newer types of institutions, may expect to adjust to these pressures in the area of overlap with high school vocational programs.

19. Changes in programs of adult education. The role of the junior college is a delicate balance in the area of adult education, involving as it does overlap with both long-established programs offered as community service to adults by high schools and certain types of applied education programs traditionally offered by university extension. The overlap may be particularly apparent when summer programs or night programs are offered. Regional factors may enter strongly into the effects

of overlap, for example, where large military establishments may create a need for variety of special programs and those may be considered as divided between university extension activities and certain junior college extended service activities.

20. Changes in birth rates. The recently observed dramatic decrease in birth rates will affect enrollments in Arizona junior colleges in the years ahead.

In view of such a large number of factors that may affect enrollments in the future, one should be cautious of generalizations that may be drawn from the data on past enrollment and the projections of future enrollment. Projections of linear or straight line trends are safer than exponential or compound interest type trends. Also, projections become hazardous when extended very far beyond the past experience on which they are based. This hazard is particularly great for exponential trends, which often become ridiculous when projected more than a few years. The reason for this is that they do not take into account a saturation or leveling-off factor. For example, a school as it approaches the limit of its physical capacity, cannot continue to grow at the rate it showed when it was in its early stages of development.

The cohort survival technique for projecting enrollments, as explained earlier, gives another set of future possibilities. This system of estimation takes into account the actual numbers of students in each of the twelve grades of the schools at a recent date and projects the numbers forward from year to year and grade to grade on the basis of what the "rates of survival" from grade to grade have been over a period of previous years. The estimated number of high school graduates obtained by this method then serves as prime data from which future junior college enrollments may be approximated.

POTENTIAL ENROLLMENTS OF IN-COUNTY STUDENTS

Of considerable importance to those responsible for decisions relative to the authorization of new junior college districts and of the enlargement of facilities in existing districts is the matter of how many resident students the districts may reasonably expect to have enrolled - resident students meaning in this instance students who are residents of the junior college district. This matter is extremely important since the main concern of a district should be to provide educational opportunities for the youth and adults in its own organizational unit. To establish a district or to expand facilities in an existing district on the assumption that adequate enrollment may continuously be anticipated from non-residents to justify the action could prove to have been unwarranted. Therefore, the survey team made ten-year projections, on a county by county basis, of the potential for resident or in-county students. The attempt was made to answer the following question: If each of the fourteen counties in Arizona had a junior college (or more than one in the case of Maricopa County), how large would the student body be in terms of the number of students who were actually residents of the county junior college district they attended? The reason the question was formed on the basis of what the potential enrollment of county residents might be if the county had a college was that the enrollment could not be expected to be as high from a given county if no college was present than if it was. It should be understood that the question was not intended to suggest that all counties should have junior colleges.

Using the previously presented linear projections of high school graduates as the primary data upon which to base the projections, the statistician calculated the county by county FTSE and headcount possibilities for the ten years 1968 through 1977, inclusive, indicated in Table 2.18 and Table 2.19, respectively.

To estimate another way the potential junior college enrollment in the several counties, Tables 2.20 and 2.21 were constructed. These tables were based on the cohort survival projections of future public school Grade 12 year-end memberships as previously presented in Table 2.8.

All four of the tables (2.18 - 2.21) were based on careful estimates for each county, considering many factors of (A) the percentage of those completing high school that would enter junior college, (B) the relationships between numbers of twelfth graders and junior college FTSE, and (C) the relationship between FTSE and headcount in each county.

The FTSE and headcount projections given in the four tables should be considered merely as approximations even though precise figures are given. If these approximations are not too far removed from what actual enrollments would be under the conditions given, a number of circumstances may be observed. Among these are the following:

1. On the basis of linear projections all counties show growth in resident FTSE and headcount. The change for Greenlee County is so slight, however, that a relatively stable condition is indicated. The increases for Apache, Mohave, Navajo, and Santa Cruz Counties, though considerable in terms of percentages above low starting bases, are not enough in actual numbers to change appreciably the thinking about the potentiality for the establishment of comprehensive junior colleges in these counties under the state system. Gila County seems to closely parallel the situation in Yavapai County relative to the potential for resident students, while Coconino County indicates more potential than does Yavapai. About two-thirds of the total growth in potential numbers of resident students for all counties combined is to be found in Maricopa County.

2. On the basis of the projections derived from the use of the cohort survival technique all counties show growth in resident FTSE and headcount except Gila, Graham, Greenlee, and Pinal Counties. Graham County actually does show a slight increase but it is so minor that the trend in the county could better be described as one of stability (as mentioned in No. 1 above). Gila County shows a tendency to go downward in potential in county enrollment for a short time and then to build back up to where it was projected to be at the beginning of the ten-year period. Greenlee and Pinal Counties are in for reductions of potential numbers of resident enrollments if the cohort survival based projections truly represent future trends. These projections show no really significant difference in the potential in Coconino and Yavapai Counties. It is important to note that the cohort survival based projections show considerable possibility for growth above a low starting base for Mohave County. The amount of growth projected for Apache, Navajo and Santa Cruz Counties does not result in very high potentials for resident FTSE and headcount at the end of the ten-year period. Nearly three-fourths of the total growth projected for the counties may be found in Maricopa County.

3. With the exception of Mohave County, the linear projections of resident student potential are higher than those based on the use of the cohort survival technique.

TABLE 2.18

COUNTY PROJECTIONS OF IN-COUNTY RESIDENT JUNIOR COLLEGE FULL-TIME STUDENT EQUIVALENCY BASED ON LINEAR PROJECTIONS OF NUMBERS OF HIGH SCHOOL GRADUATES IN THE EVENT THAT THERE WAS A JUNIOR COLLEGE DISTRICT IN EACH COUNTY, 1968-1977, INCLUSIVE

	Year									
County	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977
Apache	190	206	219	235	251	267	283	299	314	330
Cochise	855	912	968	1027	1086	1145	1201	1265	1317	1376
Coconino	508	544	580	616	652	688	724	758	794	828
Gila	435	455	476	496	516	537	557	577	598	618
Graham	277	288	300	311	321	332	344	354	365	377
Greenlee	242	243	245	247	249	250	252	254	255	257
Maricopa	15177	16782	18387	19492	20597	21703	22808	23913	25018	26123
Mohave	181	200	218	236	254	272	291	309	327	345
Navajo	215	234	252	270	287	305	323	342	358	377
Pima	3828	3993	4158	4323	4490	4658	4823	4988	5153	5320
Pinal	845	890	940	986	1034	1081	1129	1176	1224	1271
Santa Cruz	155	165	178	187	197	210	220	230	242	252
Yavapai	401	425	450	474	498	522	547	571	596	620
Yuma	1196	1261	1325	1392	1457	1521	1586	1653	1717	1782
Totals	24505	26598	28696	30292	31889	33491	35088	36689	38278	39876

TABLE 2.19

COUNTY PROJECTIONS OF IN-COUNTY RESIDENT JUNIOR COLLEGE HEAD COUNT BASED ON LINEAR PROJECTIONS OF NUMBERS OF HIGH SCHOOL GRADUATES IN THE EVENT THAT THERE WAS A JUNIOR COLLEGE DISTRICT IN EACH COUNTY, 1968-1977, INCLUSIVE

County	Year									
	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977
Apache	209	227	241	259	276	294	311	329	345	363
Cochise	1240	1322	1404	1489	1575	1660	1741	1834	1910	1995
Coconino	737	789	841	893	945	998	1050	1099	1151	1201
Gila	544	569	595	620	645	671	696	721	748	773
Graham	294	306	319	331	342	354	366	377	389	401
Greenlee	290	292	294	296	299	300	302	305	306	308
Maricopa	23881	26406	28932	30671	32409	34150	35888	37635	39366	41105
Mohave	226	250	273	295	518	340	364	386	409	431
Navajo	237	257	277	297	316	336	355	376	394	415
Pima	5742	5989	6237	6484	6735	6987	7234	7482	7729	7980
Pinal	1182	1246	1316	1380	1448	1513	1581	1646	1714	1779
Santa Cruz	225	239	258	271	286	305	319	334	351	365
Yavapai	521	552	584	616	648	679	711	743	775	806
Yuma	1674	1765	1855	1949	2040	2129	2220	2314	2404	2495
Totals	37002	40209	43426	45851	48155	50716	53138	55581	57991	60417

TABLE 2.20

COUNTY PROJECTIONS OF IN-COUNTY RESIDENT JUNIOR COLLEGE FULL-TIME STUDENT EQUIVALENCY BASED ON PROJECTIONS OF PUBLIC SCHOOL GRADE 12 MEMBERSHIPS COMPUTED THROUGH THE USE OF A COHORT SURVIVAL TECHNIQUE AND IN THE EVENT THAT THERE WAS A JUNIOR COLLEGE DISTRICT IN EACH COUNTY, 1968-1977, INCLUSIVE

County	Year									
	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977
Apache	176	190	190	217	253	224	258	265	262	303
Cochise	819	957	964	1072	1020	1140	1079	1201	1210	1226
Coconino	438	444	478	504	496	516	506	520	522	522
Gila	406	428	414	380	382	370	354	390	382	410
Graham	291	310	348	310	298	316	303	339	310	323
Greenlee	250	208	200	192	220	170	166	170	146	142
Maricopa	13137	14419	16364	17639	19388	20747	21897	23555	23488	24406
Mohave	170	194	214	286	242	306	378	404	454	482
Navajo	197	218	208	227	215	227	238	255	268	285
Pima	3550	3750	3955	3883	4170	3998	4243	4433	4493	4735
Pinal	865	845	888	860	823	790	785	820	760	770
Santa Cruz	155	160	165	200	170	170	195	188	170	213
Yavapai	396	374	432	388	394	428	448	430	448	500
Yuma	1104	1141	1169	1236	1273	1223	1340	1342	1320	1315
Totals	21954	23638	29807	27394	29344	30625	32190	34312	34233	35632

TABLE 2.21

COUNTY PROJECTIONS OF IN-COUNTY RESIDENT JUNIOR COLLEGE HEAD COUNT BASED ON PROJECTIONS OF PUBLIC SCHOOL GRADE 12 MEMBERSHIPS COMPUTED THROUGH THE USE OF A COHORT SURVIVAL TECHNIQUE AND IN THE EVENT THAT THERE WAS A JUNIOR COLLEGE DISTRICT IN EACH COUNTY, 1968-1977, INCLUSIVE

	Year									
County	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977
Apache	194	209	209	239	278	246	284	292	288	333
Cochise	1188	1388	1398	1554	1479	1653	1565	1741	1755	1778
Coconino	635	644	693	731	719	748	734	754	757	757
Gila	508	535	517	475	477	463	443	488	478	513
Graham	310	330	370	330	317	336	322	360	330	343
Greenlee	300	248	240	230	264	204	199	204	175	170
Maricopa	19800	21715	24645	26550	29180	31235	32965	35470	35375	36770
Mohave	212	243	268	358	303	383	473	505	568	603
Navajo	217	240	229	250	237	250	262	281	295	314
Pima	5325	5625	5933	5824	6255	5997	6365	6650	6740	7103
Pinal	1211	1183	1243	1204	1152	1106	1099	1148	1064	1078
Santa Cruz	224	232	239	290	247	247	283	273	247	309
Yavapai	515	486	562	504	512	556	582	559	582	650
Yuma	1546	1597	1637	1730	1782	1712	1876	1879	1848	1841
Totals	32185	34675	38183	40269	43202	45136	47452	50604	50502	52562

POTENTIAL ENROLLMENTS STATEWIDE IF EACH COUNTY HAD JUNIOR COLLEGES AVAILABLE

In the previous sub-section the potential enrollments of in-county (resident) students were examined on the basis of what might be expected if each county had a junior college. The attention is now given to what the picture would be statewide under such circumstances. Table 2.22 presents some statewide projections of totals under the above general condition. Both FTSE and headcounts are given on three bases of projection each. Linear projections include considerations of sources of enrollment from non-public as well as public schools and cohort survival projections include a nine percent upward adjustment to somewhat accommodate non-public school graduates.

The table indicates that if there were junior colleges in all the counties, FTSE would range from a low of 22,790 in 1968 under Projection B to a high of 39,876 in 1977 under Projection A, while headcount would range from a low of 34,726 in 1968 under Projection E to a high of 60,417 under Projection D. Except for the four cohort survival projections for 1976, the table projects increases for every year over the previous year. The percentages of increase range from four percent to seven percent per year on the average and are therefore considered to be very conservative.

PROJECTED ENROLLMENTS FOR THE SEVEN JUNIOR COLLEGE DISTRICTS

The enrollments submitted in the immediately preceding sub-section do not give adequate indications of what the growth patterns may actually be for the next ten years in the existing junior college districts. Consequently, Tables 2.23 and 2.24 were prepared. Table 2.23 uses the in-county resident student projections previously presented in Tables 2.18 and 2.19 as a primary source of data. It is by and large a linear projection with adjustments for the factors related to the opening of colleges in the new districts.

The second table, Table 2.24 presents future enrollment possibilities for the seven districts on the basis of the use of the cohort survival technique for estimating Grade 12 year-end memberships. That is, the previously presented data on future Grade 12 year-end memberships served as the basis for building up resident enrollments in the junior colleges and then additions were made for non-resident students.

TABLE 2.22

STATEWIDE PROJECTIONS OF FULL-TIME STUDENT EQUIVALENCY AND HEADCOUNT ENROLLMENTS IN JUNIOR COLLEGES IF EACH OF THE COUNTIES HAD THESE EDUCATIONAL INSTITUTIONS AVAILABLE, 1968-1977, INCLUSIVE

Bases for Projections*	Year									
	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977
Full-Time Student Equivalency										
A.	24,505	26,598	28,696	30,292	31,889	33,491	35,088	36,689	38,278	39,876
B.	22,790	24,011	25,163	27,365	28,557	29,105	29,961	31,686	31,593	32,910
C.	23,930	25,765	32,490	29,859	31,985	33,381	35,087	37,400	37,314	38,839
Head Count										
D.	37,002	40,209	43,426	45,851	47,782	50,716	53,138	55,581	57,991	60,417
E.	34,726	36,587	38,343	41,700	43,516	44,351	45,655	48,284	48,142	50,150
F.	35,082	37,796	41,619	43,893	47,090	49,198	51,723	55,158	55,047	57,293

*A. Sum of county by county linear projections.
B. Cohort survival projection of state total of year-end memberships of public schools Grade 12 plus 9 percent for non-public school graduates.
C. Sum of county by county cohort survival projections plus 9 percent for enrollments of non-public school graduates.
D. Same as "A".
E. Cohort survival projection of 95 percent of state total of year-end memberships of public schools grade 12 times 160 percent, plus 9 percent for enrollments of non-public school graduates.
F. Same as "C".

Table 2.23

PROJECTED ENROLLMENTS FOR ARIZONA JUNIOR COLLEGE DISTRICTS USING LINEAR PROJECTIONS OF IN-COUNTY RESIDENT STUDENTS AS A PRIMARY SOURCE OF DATA, 1968-1977, INCLUSIVE

County	Year									
	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977
Full-Time Student Equivalency										
Cochise	1025	1050	1050	1100	1175	1250	1300	1375	1450	1525
Graham	1075	1050	950	1050	1150	1225	1400	1400	1475	1575
Maricopa	15575	17100	18750	19875	21025	22150	23300	24450	25575	26725
Pima	--	--	4275*	4450	4625	4800	4975	5150	5325	5500
Pinal	--	900*	975	1025	1075	1125	1175	1225	1275	1325
Yavapai	--	500*	550	600	625	650	700	725	750	800
Yuma	1575	1525	1525	1625	1700	1800	1900	2000	2075	2175
Totals	19250	22125	28075	29725	31375	33000	34750	36325	37925	39625
Head Count										
Cochise	1475	1525	1500	1600	1700	1800	1900	2000	2100	2200
Graham	1100	1075	975	1075	1175	1250	1450	1450	1525	1600
Maricopa	24400	26800	29350	31150	32925	34725	36500	38300	40075	41850
Pima	--	--	6425*	6675	6950	7200	7450	7725	7975	8250
Pinal	--	1275*	1350	1425	1525	1575	1650	1725	1800	1875
Yavapai	--	675*	700	775	800	850	900	950	1000	1025
Yuma	2250	2200	2175	2325	2450	2575	2700	2850	2975	3100
Totals	29225	33550	42475	45025	47525	49975	52550	55000	57400	59900

*Assuming a Sophomore class.

TABLE 2.24

PROJECTED ENROLLMENTS FOR ARIZONA JUNIOR COLLEGE DISTRICTS USING COHORT SURVIVAL PROJECTIONS OF GRADE 12 YEAR-END MEMBERSHIPS AS A PRIMARY SOURCE OF DATA, 1968-1977, INCLUSIVE

County	Year									
	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977
Full-Time Student Equivalency										
Cochise	975	1100	1050	1150	1100	1250	1400	1325	1350	1375
Graham	1100	1075	1100	1150	1225	1350	1425	1550	1625	1725
Maricopa	13525	14725	16700	18025	19800	21200	22375	24075	24050	25000
Pima	0	0	2900	4000	4300	4150	4400	4600	4650	4900
Pinal	0	650	925	900	850	825	825	875	825	825
Yavapai	0	475	550	525	525	575	600	600	625	700
Yuma	1450	1425	1375	1475	1525	1500	1650	1675	1675	1700
Totals	17050	19450	24600	27225	29325	30850	32675	34700	34800	36225
Head Count										
Cochise	1425	1600	1500	1675	1600	1800	2025	1925	1950	2000
Graham	1125	1125	1150	1200	1275	1400	1475	1625	1675	1775
Maricopa	20300	22100	25075	27025	29700	31800	33575	36125	36075	37525
Pima	0	0	4350	5950	6350	6100	6475	6775	6875	7225
Pinal	0	900	1275	1250	1200	1175	1175	1225	1150	1175
Yavapai	0	625	725	675	700	750	800	775	825	900
Yuma	2025	1975	1925	2050	2150	2100	2300	2350	2350	2375
Totals	24875	28325	36000	39825	42975	45125	47825	50800	50900	52975

It should be clearly understood that many assumptions had to be made and that if any of them should prove to be invalid, the projections themselves may not represent as accurately as one would hope what the future picture will be. It would be advisable to consider the projections as tentative guidelines that should be revised annually as better background data becomes available.

The most important idea to be gained from the two tables is that both FTSE and headcount enrollments have the possibility of more than doubling by 1977. Thus, Table 2.23 shows FTSE going from 19,250 in 1968 to 39,625 in the fall of 1977 while headcount is recorded as moving upward from 29,225 to 59,900 during the same period. Table 2.24, which en toto is a more conservative projection, lists FTSE possibilities from 17,050 for 1968 to 36,225 in 1977 and headcount from 24,875 to 52,975.

It is interesting to note that the projections for Graham County district are higher on the cohort survival basis (Table 2.24) than on the linear basis. It is also noted that there is considerable difference in the two sets of projections for Pinal County - the linear projection being much higher. In this instance the school membership picture just did not support the thesis of phenomenal growth in the near future. The survey team is of the opinion that hoped for future agricultural, business and industrial development in the county with a resultant heavy move-in of population must be an important factor if linear (or possibly exponential) trends are going to hold up. It should also be noted that the cohort survival projections of year-end memberships for Yuma County did not agree with linear projections. Here again, if the linear trends are to prove accurate, there will continue to be much in-migration in Western Arizona.

CHAPTER III

CHAPTER III

JUNIOR COLLEGE PLANT FACILITIES

The focus of this chapter is on the completed building facilities of six Arizona junior colleges as of the fall of 1967. The major concern is description of physical facilities with appropriate interpretation throughout. A concerted effort on the part of the survey team was made to describe the then existing junior college facilities in as objective and accurate manner as possible. Visits by team members to six of the colleges yielded first-hand observations and a wealth of information concerning the status and number of physical facilities. The information collected was divided into four subsections dealing with a description of existing facilities, non-residential square footages, classrooms and laboratory space, and utilization of instruction rooms. A description of the existing facilities and some information about those planned for the three new districts is presented in the first subsection. There is also brief mention of the newly established Maricopa Technical College, including information relative to the intended assignment of space in the institution.

DESCRIPTION OF FACILITIES

The intent of this section is to provide a general overview, rather than a detailed description, of Arizona's junior college facilities for those who may not already be familiar with the plant facilties at the colleges. To have provided depth of detail here may have been duplication of concurrent survey work being done by others. Also included in this first portion of the chapter is mention of some plant facility needs that seemed apparent to the survey team. The enumeration of plant needs is not intended to be all-inclusive.

ARIZONA WESTERN COLLEGE

The setting of Arizona Western College, the Yuma County junior college, is a section of land a few miles east of the city of Yuma. Over 80 acres of somewhat elevated land, overlooking the Gila Valley, has been highly developed to date with covering grasses, shrubbery, flowers and palm trees on the immediate landscape among the buildings, and beside covered walkways, driveways and parking lots. Beyond the campus may be seen desert shrubbery, fertile fields, and on the scenic horizon the Kofa mountains.

About two dozen well-maintained buildings, for the most part of a style of architecture that blends well into the western scene, comprised the major structures at the time of the survey. These included the following:

Buildings Primarily for Instruction

- Agriculture shop and classroom buildings (2) (plus plant nursery facilities)
- Business Education (two stories)
- Fine Arts
- General Classroom Building
- Gymnasium (with locker room annex and a pool)
- Home Economics
- Library Learning Center
- Little Theater
- Science (2)
- Technology (3 units -- 2 being together)

Buildings Ancillary to Instruction

- Administration
- Cafeteria
- Student Center

Other Structures

- Dormitories (3) (plus 5 small units for 10 students each under construction)
- Maintenance Building
- Utility Unit

Not including the dormitories there was approximately 150,000 square feet of gross building area. A few structures were built of sheet steel on steel framing. These have been well utilized and adapted to changing conditions. At the time of the completion of this survey report, no building was over five years old, since the original buildings were completed for use for the fall of 1963.

The college has other structures proposed to be added as needed and as funds become available. Among these are another technology building and one more agriculture shop and classroom unit, a liberal arts facility, expansion of the library learning center, additional facilities for physical education, and more dormitories if enrollments justify such. A student union building may also be needed.

COCHISE COLLEGE

Cochise College is situated along Highway 80 about 16 miles east of the Bisbee-Lowell-Warren area and seven and one-half miles west of Douglas in Cochise County. The campus is centrally located on a level 540 acre site in open country that affords inspiring vistas of the distant mountains. The surroundings promote a feeling of freedom and space -- big country.

The low, one-story tile-roofed buildings, with their interestingly carved doors, are distinctively Southwestern in architectural design and harmonize with the surroundings. Fourteen permanent buildings were in use on the campus at the time of the survey. They were as follows:

Buildings Primarily for Instruction

- Fine Arts
- Learning Resources Center
- Liberal Arts
- Little Theatre
- Physical Education (with swimming pool)
- Science and Business
- Science and Technology

Buildings Ancillary to Instruction

- Administration
- Faculty Offices Unit
- Student Services
- Student Union

Other Structures

- Men's Residence Hall (Huachuca Hall)
- Women's Residence Hall (Chiricahua Hall)
- Maintenance Building

The building program appeared to have been well planned and coordinated to date and it has resulted in a campus in which the buildings harmonize and complement each other. Especially impressive were the two living complexes -- Huachuca and Chiricahua Halls. All buildings are nearly new, since the school has been in operation only since the first semester of 1964. Gross building area as of 1967 was about 109,000 square feet.

A major need, which will be met by January 1969, is a vocational-technical building to assist the school in becoming more comprehensive in its curriculum offerings. Increased enrollment may be dependent, in part at least, upon the provision of additional residence facilities.

EASTERN ARIZONA COLLEGE

In contrast with the two preceding colleges, Eastern Arizona College is located within the city limits of an incorporated town -- Thatcher, in Graham County. At the time of the survey the campus was divided into two parts -- an original or "North Campus" consisting of 16 acres of land with 13 major buildings or building complexes thereon and a new or "South Campus" of 35 acres with three major building complexes that perhaps could be called seven buildings. Stadium and athletic fields were also on the South Campus. The two sections of the campus were separated by a long city block. Some of the lots between the two were owned by the college. The following were the main building facilities:

Buildings Primarily for Instruction

Alumni Library (recently expanded)

Auditorium

Guitteau Gymnasium

Music Cottage

North Classroom Unit (former agriculture building and annex)

Pace Home Economics Building

Science Complex

South Campus Classroom Complex

Technical Education Complex (4 units)

Buildings Ancillary to Instruction

Administration Building (known as "Old Main" and used some for instruction also)

Cafeteria-Dining Unit (part of Mark Allen Hall)

Student Center

Other Structures

Garage, Maintenance and Storage Complex

Mark Allen Hall (men's dormitory)

Nellie Lee Hall (women's dormitory)

Wesley Taylor Hall (women's dormitory)

The North Campus is attractively landscaped and provides a pleasant setting for buildings of a variety of architectural styles from that typical of multi-storied brick buildings of the early 1900's (Old Main) to contemporary designs. Considerable landscaping around the new buildings on the South Campus had also been completed. Of interest was the fact that Eastern Arizona College has buildings that were erected in each decade of the twentieth century.

Although the school had over 215,000 square feet of area under roof, investment in these structures was probably less than $3,000,000 since many facilities were erected during years when construction costs were more moderate than is true today. Because of the age and lack of flexibility of certain buildings, there will continue to be needs for some replacements as well as remodeling where economically feasible. Also, if enrollments justify, some further expansion will be in order. Among the needs may be the following: Additional vocational technical facilities, improved science laboratories, a new auditorium, further expansion of library facilities to provide a complete instructional materials center, additional space for the music department, and more student housing. Much will depend, however, upon the future organization of the junior college district itself; for example, whether or not it includes additional counties. Also, care will need to be exercised to avoid over-expansion in the event that the establishment of new districts reduces enrollment for a few years. In any event it would seem appropriate to have the two sections of the campus eventually connected together by means of a scenic mall. (Some initial planning is to be done for a Fine Arts Center that would include an auditorium.)

GLENDALE COMMUNITY COLLEGE

Glendale Community College is located at 6000 West Olive in Glendale, Maricopa County. The near level 120 acre campus is surrounded by irrigated agricultural land that is becoming suburban in character. A quotation from the 1967-68 catalogue of the college helps to describe the college plant.

> Building architectural style is contemporary, with touches of Spanish and Indian. The palm-tree environment is reinforced by the tree shaped columns which predominate in all structures. Burnt adobe and brick combine with precast concrete elements to create buildings which enhance the natural beauty of the landscape.
>
> . . .
>
> Buildings are arranged so as to create open spaces, which vary from large pedestrian malls to intimate courts within particular structural groups . . . .

Since the campus was not opened until the fall of 1966, all of the permanent buildings were practically new. The gross floor space was approximately 200,000 square feet with nearly all of this being at ground level. (The business education building is a two-story structure.) The principal structures on campus were as listed below:

Buildings Primarily for Instruction

- Business Education
- Fine Arts
- Gymnasium
- Instructional Materials Center
- Music
- Science

Buildings Ancillary to Instruction

- Administration
- Faculty Offices (3 buildings)
- Locker Room Unit

In addition to the above there were two, two-classroom, wood frame, portable buildings, two small greenhouses, a large swimming pool (then under construction), a 40 foot by 40 foot metal storage shed, a service yard area, some outdoor athletic facilities and parking space for about 1300 motor vehicles. This campus, like the others in Maricopa County, was intended for commuters, therefore, there were no residence halls.

At the time of the study it was apparent that the rapidly growing institution had immediate school plant facility needs. For the instructional program in what is to be termed a comprehensive community college, a sizeable vocational-technical complex appeared to be an immediate requirement. Also conspicuously absent was a facility for the performing arts -- something like a little theater. It appeared that the physical sciences would be needing more space and that a life sciences building would be essential. It was particularly evident that a considerable number of general or all-purpose classrooms were going to be required. It was noted, for example, that library space was being used for classrooms,[1] as was some space in the student union.

It was seen that an acute need for more faculty office space has been developing and unless room is provided it will become a more serious problem. The construction of an adequately sized building for student personnel services would greatly facilitate such services and would alleviate space problems in the administration building. Attention will also need to be given to the space requirements for the bookstore, for storage, and for plant maintenance and operation. Development of further indoor and outdoor facilities for physical education and for athletics will be necessary and increased parking space is required. (A stadium and track, and increased parking have been planned.) Finally, the survey team felt that the district should plan to purchase an additional 40 acres upon which it has an option.

MESA COMMUNITY COLLEGE

Mesa Community College is another young and growing two-year institution that is helping to serve the educational needs of a significant portion of the population of Maricopa County. This school is located on 120 acres of beautiful level land in still relatively open country at South Dobson Road and Southern Avenue within the boundaries of the city of Mesa. The practically new permanent buildings are described as being of a Spanish-Indian architectural style. Their low silhouettes seem particularly appropriate to their setting.

During the 1967-68 school year the following buildings were on campus:

PERMANENT STRUCTURES

Building(s) Primarily for Instruction

Life Science

---

[1] Sometimes space in a library building, if equipped with tables and chairs, can be used for classroom purposes during that portion of the day when the need is greatest for classrooms and can become library reading room area when the need for such space is greatest.

Building(s) Ancillary to Instruction

Student Center (a complex of three units being used temporarily for administration and instruction as well as a student center)

Other Structures

Mechanical Plant

Plant Potting and Lathe House (not necessarily permanent)

PORTABLE STRUCTURES

Buildings Primarily for Instruction

Double Classroom Buildings (10 units)

Single Classroom Buildings (6 units)

Library (temporary) (4 units combined)

Buildings Ancillary to Instruction

Faculty Offices (4 multiple office units)

Mobile Multi-purpose Transports (2 units)

Physical Education Locker Rooms (3 attached units)

The last named units are of metal construction; all other portable structures are wood frame. It was noted that the portables were exceptionally well maintained. These structures were located on campus for temporary use and were to be removed as rapidly as new permanent structures could be financed and built to replace them. Vigorous growth in student enrollment, however, may preclude the removal of many units for a number of years.

Also during the 1967-68 school year three permanent buildings were under construction, which add a gross of over 100,000 square feet under roof to the approximately 60,000 gross square feet of permanent buildings. These new units are a library (curriculum materials center), a physical sciences building, and a gymnasium.

With the student enrollment going up much more rapidly than had once been anticipated, the need for additional facilities is pressing. The planned technology complex, business education facility, general classroom building and administration unit will be put to use as quickly as they can be constructed. Permanent facilities for fine arts and for liberal arts are needed as are several buildings for faculty offices, if these latter units are not to be incorporated in instructional buildings. Adequate facilities for student personnel services, including counseling and guidance, must be provided. Development of playing fields, stadium, parking lots, driveways and walkways, and landscaping is moving forward as it must. As is the case for the Glendale Campus, the district governing board has an option on 40 adjoining acres of land. Through careful long-range planning, Mesa Community College together with its sister institutions shows promise of having an outstanding physical plant.

PHOENIX COLLEGE

Phoenix College, the second oldest junior college in the state of Arizona and the first college in the Maricopa County junior college district, is located in Phoenix on West Thomas Road between North 11th Avenue on the east and North 13th and 15th Avenues on the west. The campus of approximately 46 acres is surrounded by an attractive, well-kept residential section of the city.

With minor exceptions, mentioned below, the campus in the spring of 1968 was an exceptionally attractive unit. The well-groomed lawns and shrubbery and the mature trees, appropriately spaced among the 38 buildings contributed to the pleasant aspect of the buildings section of the campus. There were 15 permanent structures of brick and, in some cases, concrete block construction. Some of these had just undergone a refurbishing through the removal of exterior paint so that the original beauty of the red brick was restored. In addition to the rather sizeable permanent structures, (total gross area of about 175,000 square feet), there were 23 smaller temporary wood frame buildings, (about 32,000 square feet gross area) most of which were portable. Sixteen of these were quite new in appearance and were exceptionally well maintained. The other seven, however, were too old to be of good appearance regardless of the attention being given to them. Because there were not enough classroom facilities to accommodate enrollments, the college was renting space at several locations off-campus.

The following is a list of the buildings that were on-campus:

PERMANENT STRUCTURES

Buildings Primarily for Instruction

Bons Hall (a little theater)

Fine Arts (art)

Fine Arts (music)

Gymnasium

Home Economics (two stories)

Liberal Arts (two stories)

Library (three "levels")

Science (two stories)

Buildings Ancillary to Instruction

Admissions

Administration

Auditorium

Data Processing

Student Center

Student Services

Other Structures

Central regrigeration plant and maintenance compound

ACCEPTABLE TEMPORARY STRUCTURES

Buildings Primarily for Instruction

Electronics (2)

Fine Arts

General Classroom

Liberal Arts (2)

Reading and Communications Center

Science (2)

Buildings Ancillary to Instruction

Bookstore

English Departmental Offices Unit

Gymnasium Supplemental Unit

Teachers' Offices Buildings

Student Personnel Unit

In addition to the 16 acceptable temporary buildings, there were the seven previously mentioned substandard temporary units. These were being used for classrooms, offices and storage purposes. Finally, there were a handy little (100 square feet) storage unit for playground equipment for children and a mobile unit of mental construction.

The replacement of the older temporary buildings with permanent structures appeared to be an immediate need. With the land area being as limited as it is, perhaps consideration should be given to planning new buildings as multistory units. The survey team was of the opinion that a first-rate technology complex should receive high priority. There was agreement, too, that additional general and special purpose classrooms, as for example for science, should be erected as soon as funds would permit. Administrative and pupil personnel services appeared to need more adequate space. Progress toward increased and improved facilities for physical education should continue. More land for additional parking facilities seemed desirable. The Maricopa district is to be commended for the progress it has made on the Phoenix campus while under pressure to rapidly develop the other campuses at the same time.

MARICOPA TECHNICAL COLLEGE

As mentioned in Chapter I, a fourth college was recently established by the Maricopa County Junior College District. The facility for this new institution, named Maricopa Technical College, is unique among Arizona's Junior Colleges. The physical plant is a seven story plus basement steel and concrete structure located in downtown Phoenix at the intersection of Washington and First Streets. It provides a gross of approximately 140,000 square feet of space.

An intensive remodeling and renovation program has been going on to expedite the assignment of space as follows:

Basement -- district-wide library technical services, student lounge, and warehousing.

Street floor -- IBM 360 Computor (for instruction and for district services including administration, model store - for distributive education and retailing, - and a dental hygiene clinic and laboratory - to support instruction).

Second floor -- administrative offices of the college, counseling, and student lounge and reading room.

Third floor -- classrooms and large conference rooms.

Fourth floor -- office education and distributive education.

Fifth floor -- technical and industrial education.

Sixth floor -- (not developed at the time of this writing).

Seventh floor -- district administrative offices.

FACILITIES PLANNED FOR THE NEW DISTRICTS

Pima, Pinal and Yavapai Counties have established junior college districts under the state system and are moving forward with plans to erect the facilities briefly described below. It is anticipated that the new colleges in Pinal and Yavapai Counties will be ready for the first semester of the 1969-1970 school year while the Pima County institution is scheduled for opening in the fall of 1970.

Central Arizona College, Pinal County's soon-to-be-constructed junior college, will be established on a 400 acre site on the east slope of Signal Peak. The campus will be northeast of Casa Grande and west southwest of Coolidge near the intersection of Woodruff and Overfield Roads. A Monterey architectural theme of Spanish, Mexican and American Indian influence has been selected for the buildings. As a publication of the college says, "This motif seems to fit best the desert mountain terrain of the college site." Initial construction should provide a gross of about 150,000 square feet of building area exclusive of dormitories. Included in this first phase are an administration unit, a fine arts building, an instructional materials center, a physical education complex, a science facility, a student center, a technology unit, and a central plant building. A start for individual dormitory units associated with a central lounge is also scheduled. A functional and attractive, though not necessarily expensive, campus is the goal.

Pima College is to be located on a 270 acre track of rolling foothills land overlooking downtown Tucson from the west. In general the site is bounded by Speedway Boulevard on the north, La Cholla Boulevard on the east, Anklam Street on the south, and Greasewood Avenue on the west. The immediate campus will be on a low ridge on the south portion of the site near Anklam. Considerable careful planning is being done to provide a completely modern complex of buildings totaling about 285,000 square feet gross of instructional facilities plus nearly 75,000 square feet gross for a student union building. There will be a large group instruction center, a learning resources center -- shared temporarily by administration; two "student houses" -- to accommodate some general classrooms, faculty offices, student study lounges and snack bars; four laboratory units for art and music, technologies, life and physical sciences, and propulsion studies; a multi-purpose physical development structure; and two small (4,000 square feet each) "innovative centers" with faculty offices and student study spaces. Enrollment growth and community needs will determine subsequent facility development.

Yavapai County's junior college is to be erected on an attractive, south-sloping tract of land totaling about 100 acres. The land is in the city limits of Prescott at the eastern edge of town where Highways 89 and 69 come together on Gurley Street. The irregular terrain offers many interesting architectural possibilities for buildings. Four two-story flat topped buildings with large pillars, similar to certain other architecture in the community, will constitute the first educational plant. They are to be as follows: A learning resources center with classrooms, an occupational education building including science facilities, a gymnasium with classrooms, and an administration-student center. These facilities will total a gross area of between 140,000 and 150,000 square feet. In addition to the above it is likely that there will be one dormitory complex.

NON-RESIDENTIAL BUILDING SQUARE FOOTAGES

Presented below in Table 3.1 are the total gross building areas, both permanent and temporary, for each of the six[1] Arizona junior colleges. Exterior dimensions formed the basis for computing the gross areas of the buildings. Dormitories were excluded from the campus total gross non-residential building areas.

TABLE 3.1

ARIZONA JUNIOR COLLEGE NON-RESIDENTIAL BUILDING SQUARE FOOTAGES, FALL OF 1967

College	Total Gross Building Area Completed* (1)	Full-time Student Equivalents (FTSE) (2)	Gross Building Space per FTSE (3)
Arizona Western	146,569	1,309.00	120
Eastern Arizona	215,702	1,010.00	231
Cochise	119,529	929.13	128
Glendale	200,323	3,336.00	60
Mesa	104,532	2,935.00	35
Phoenix	207,383	6,096.00	34

*Computed in square feet from blueprints plus some actual measurements, rented space not included.

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[1] Maricopa Technical College came into the picture late in the survey and is not included in the discussion.

As one scans Table 3.1 it may come as a surprise to him that Eastern Arizona College had the greatest gross square footage of all six institutions with a total of 215,702 square feet. Phoenix and Glendale Colleges were not far behind, however, with 207,388 and 200,323 square feet respectively, Mesa Community College showed the lowest completed construction total area (104,532 square feet), but had the highest under construction total of 99,504 square feet. It should be understood that the gross areas shown in Column 1 are estimates based on computations from blueprints and some measurements. They should not be considered as being exact.

The total gross square footage available per FTSE is given in Column 3 of Table 3.1. Again Eastern Arizona College was high with over 231 square feet per full-time student equivalent. The FTSE for October 1, 1967 for each of the six institutions, it will be noted, is listed in Column 2 of the table. In general it might be noted that all three institutions in the Maricopa district evidenced considerably lower space figures per FTSE than the other three institutions. Unless the Maricopa district operated on a longer instructional day gross space available per student while on campus would be relatively less than that available at the other institutions.

CLASSROOMS AND LABORATORY SPACE

The objective in providing this section was to develop a more accurate picture of the amount of instructional space within the junior colleges. Blueprints of the campus instructional buildings were used to determine the actual square footages of general classrooms, lecture rooms, and special purpose areas. The latter areas were defined as those equipped with more than normal classroom furnishings for general all-purpose academic work. Examples of special purpose areas are typing rooms, science laboratories, home economics sewing rooms, and vocational education shops and laboratories. General classrooms, of course, might contain small special items, such as maps and charts, in addition to their normal furnishings.

Table 3.2, which follows, shows the area each college had available

TABLE 3.2

AVAILABLE GENERAL CLASSROOM AND SPECIAL INSTRUCTIONAL SPACE AND SPACE PER FULL-TIME STUDENT EQUIVALENT IN ARIZONA JUNIOR COLLEGES

OCTOBER 1967

College	General Classroom and Lecture Room Areas*	CR and LR Areas Per FTSE	Total Special Purpose Areas	Special Purpose Areas Per FTSE
Arizona Western	15,268	11.7	42,856	32.7
Cochise	9,051	9.7	19,925	21.4
Eastern Arizona	24,788	24.5	32,939	32.6
Glendale	36,828	11.0	25,471	7.6
Mesa	40,317	13.7	19,272	6.6
Phoenix	40,036	6.6	32,289	5.3

*Computed in square feet from blueprints, rented space not included.

for classroom and special purpose area use (excluding rented space). The table also gives the area per full-time student equivalent in each of the two aforementioned categories. In both instructional areas Eastern Arizona College is outstanding in terms of the relatively large spaces available per student. Phoenix College evidenced the lowest area per full-time student equivalent of all six institutions but rented space increased the area available to students. Also worthy of note is the relatively low classroom area per FTSE at Cochise College, but the same college had one of the highest area figures per FTSE with respect to instructional special purpose areas. Almost the converse is true at Arizona Western College.

UTILIZATION OF INSTRUCTIONAL ROOMS

An analysis of the utilization of instructional areas at the six junior colleges was based on the room-period as a unit of usage. By definition, a room-period is one room in use for one class period. In the discussion that follows general classrooms and lecture rooms are considered separately from special purpose areas. Room usage has been assessed, within each of the two categories, by days of the week as well as by class periods of the day. Figure 3.1 through 3.6 present the room-period use per week by class periods of the day for each of the schools. Two basic types of information may be obtained from these six figures: First, the number of room periods of use per week for each of the six institutions is given; Second, the room usage of general classrooms and special purpose areas may be compared for each institution. It should be understood that the top number shown on the ordinate of each figure does not imply a maximum.

In Figure 3.7 all six institutions may be compared with respect to room-period usage per week by day of the week. Absolute numbers of room periods of utilization were used in compiling Figure 3.7 and therefore it was not surprising that Phoenix College evidenced the greatest number of room-periods of use per week and that Cochise College had the lowest number. A large school with many classrooms and students would be expected to show more room periods of use per week. Figure 3.8 is also based on absolute number of room-periods of use but considers special purpose areas. It reflects the trends apparent in Figure 3.7.

In order to make a just comparison of utilization of rooms at the six institutions, the total available room-periods and actual room-periods of usage were used to determine the percentage of utilization for the two categories of instructional areas. Figures 3.9 through 3.12 give the percentages of utilization by day of the week and periods of the day for general classrooms and special purpose areas for the first semester of 1967-68. In Figure 3.9 it will be noted that Mesa College evidenced the highest rate of utilization of general classrooms during every period of the day. Also on Figure 3.9 one notices that late afternoon percentages of utilization were much reduced in all institutions except Mesa Community College. That same high level of utilization for Mesa Community College is evident in Figure 3.10 which deals with the percentages of room period utilization for special purpose areas at the colleges. Generally, special purpose areas appear to be used at a lower rate than general classrooms. However, as is common, the former appear to be used more frequently during the late afternoon periods. It is normal for special instructional areas to be utilized less than general classrooms and lecture rooms.

Figure 3.1

ROOM PERIODS OF USE PER WEEK BY CLASS PERIODS
ARIZONA WESTERN COLLEGE
FIRST SEMESTER 1967-1968

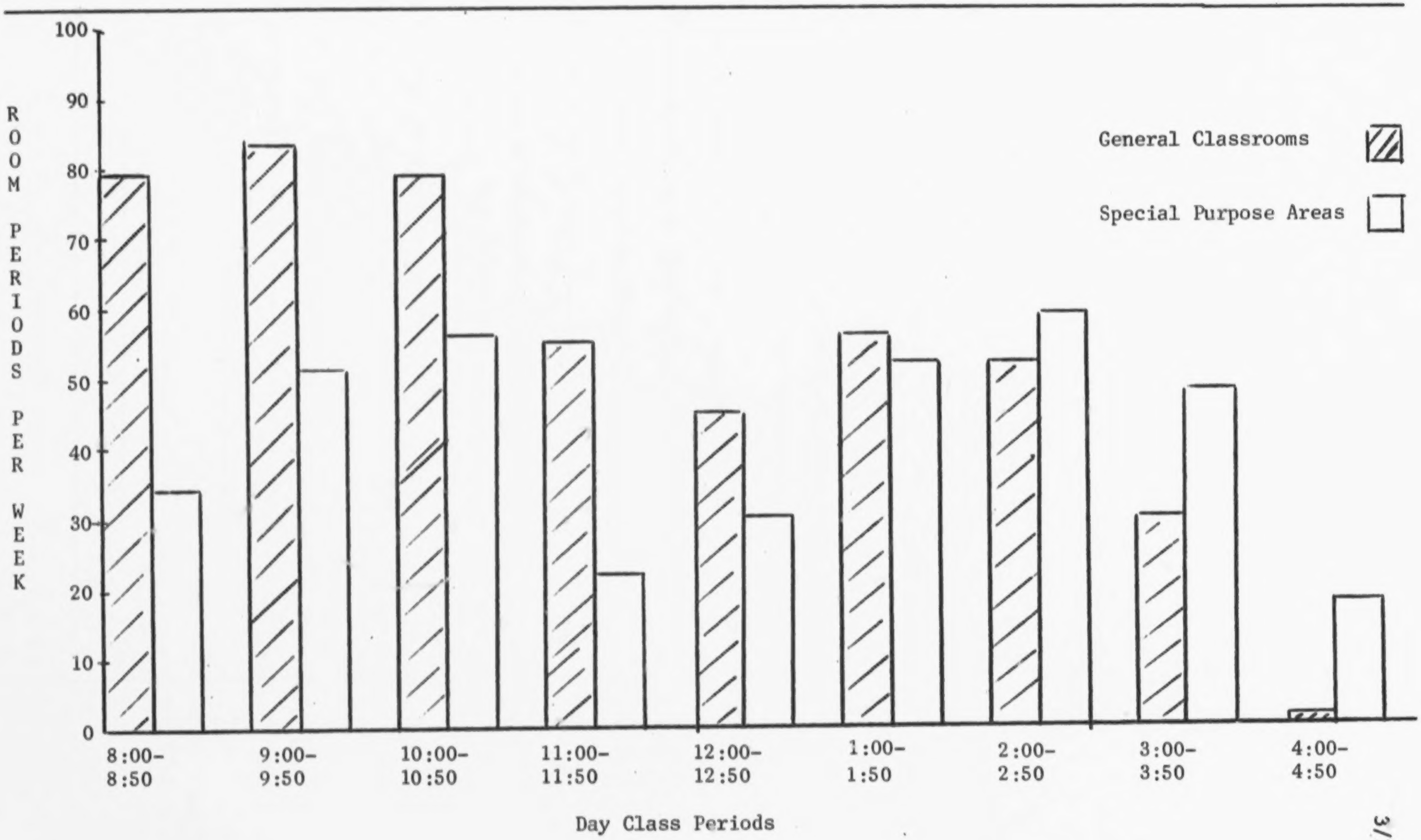

Figure 3.2

ROOM PERIODS OF USE PER WEEK BY CLASS PERIODS
COCHISE COLLEGE
FIRST SEMESTER 1967-1968

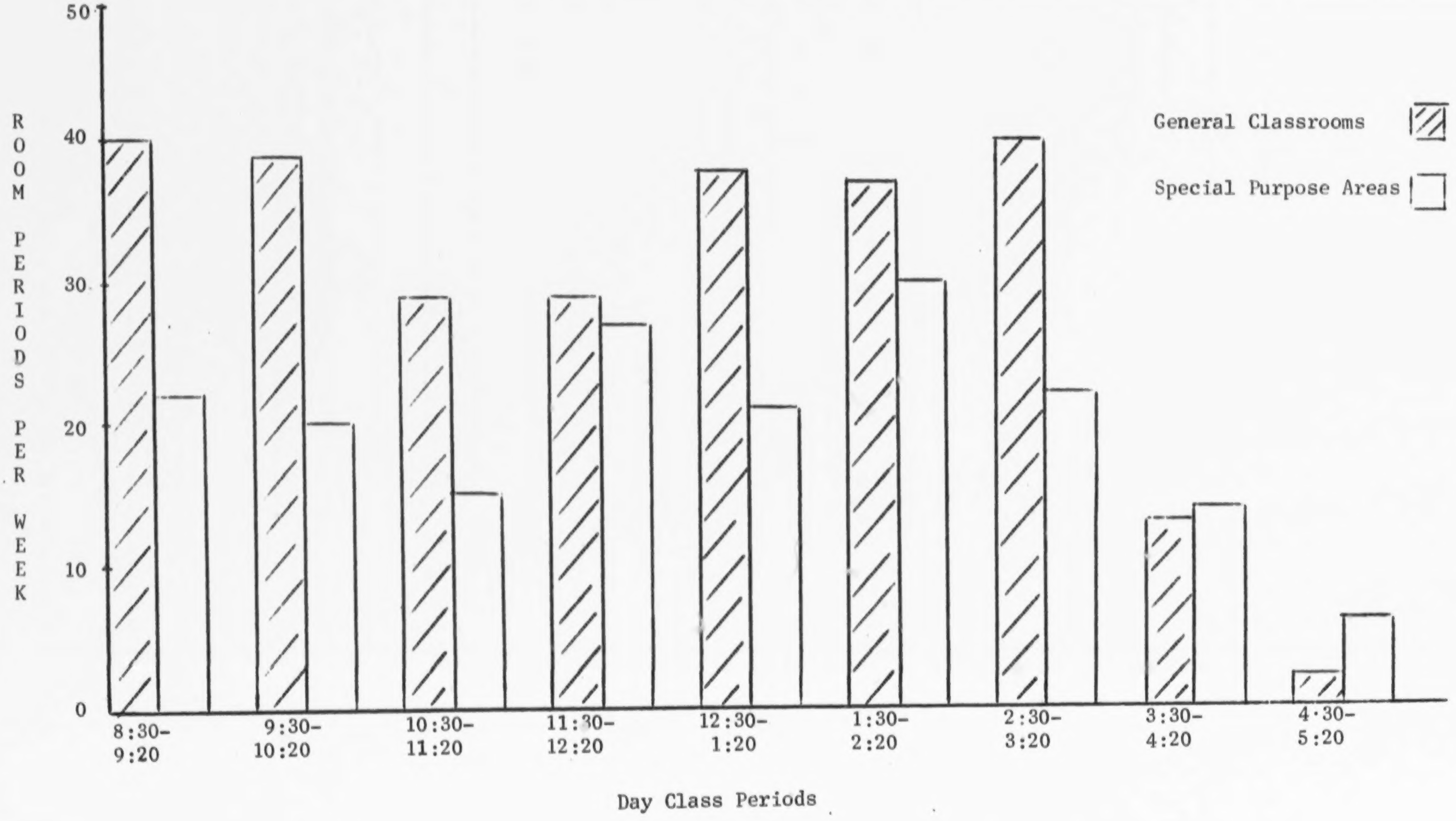

Figure 3.3

ROOM PERIODS OF USE PER WEEK BY CLASS PERIODS
EASTERN ARIZONA
FIRST SEMESTER 1967-1968

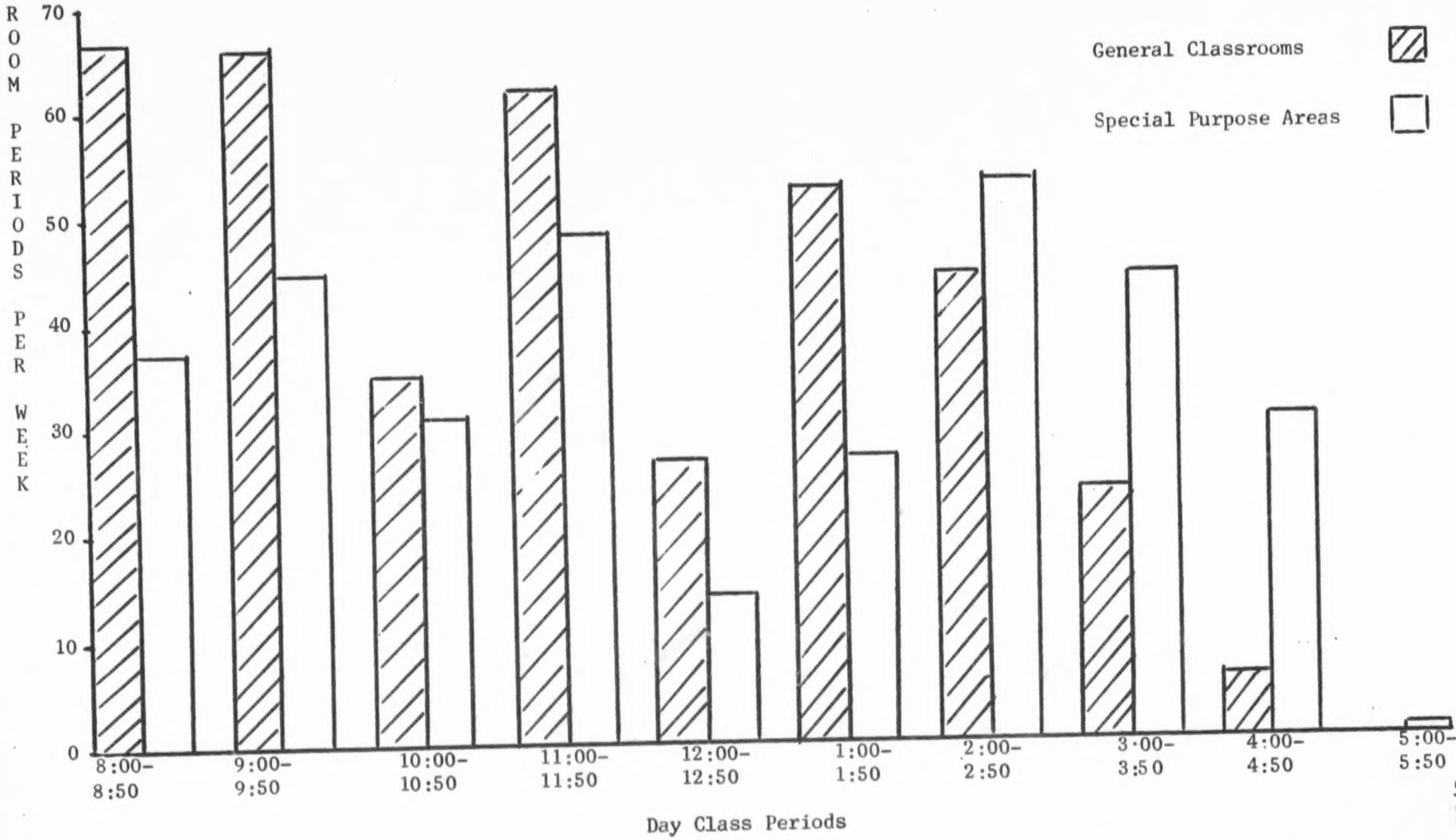

Figure 3.4

ROOM PERIODS OF USE PER WEEK BY CLASS PERIODS
GLENDALE COMMUNITY COLLEGE
FIRST SEMESTER 1967-1968

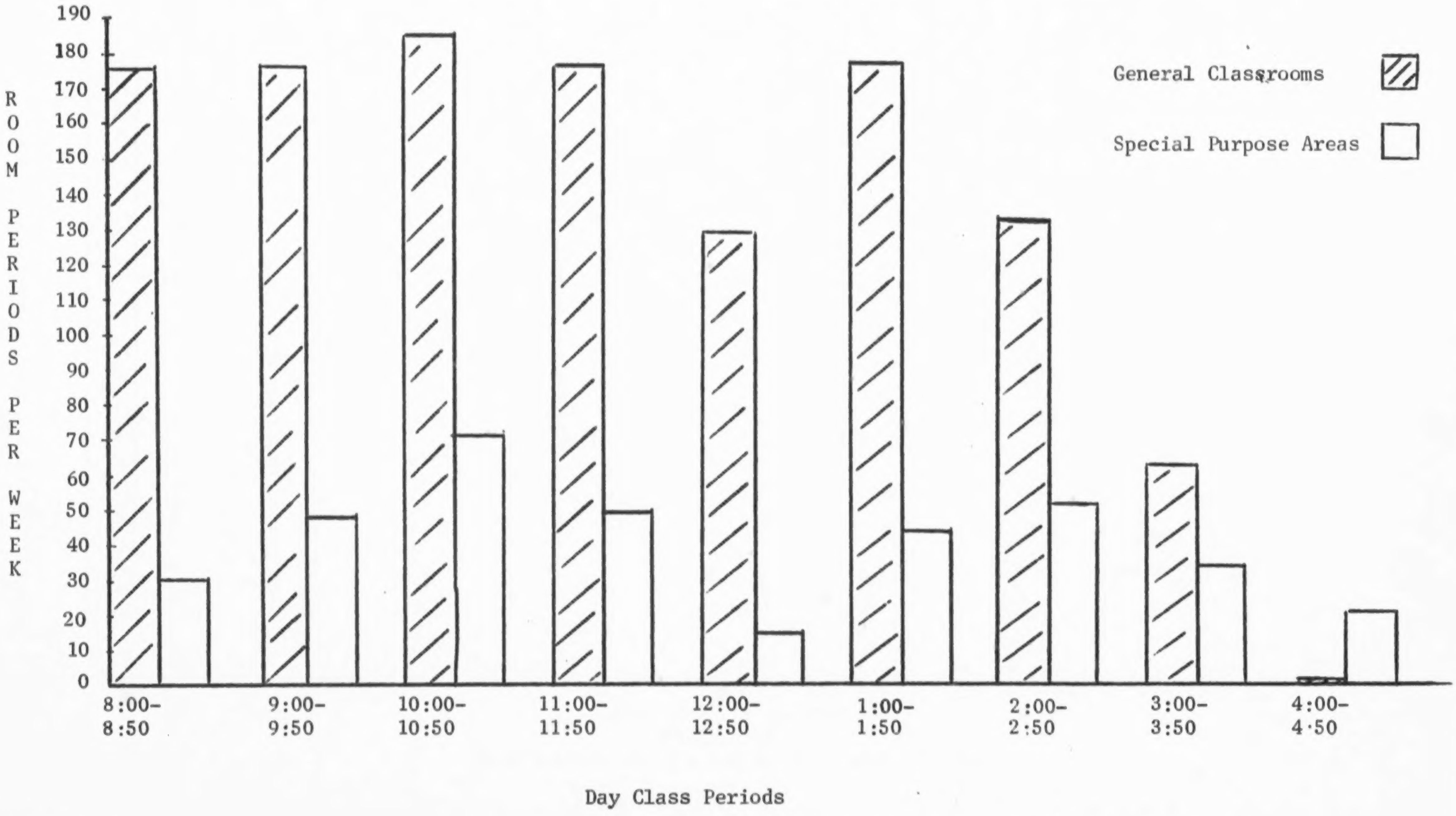

Figure 3.5

ROOM PERIODS OF USE PER WEEK BY CLASS PERIODS
MESA COMMUNITY COLLEGE
FIRST SEMESTER 1967-1968

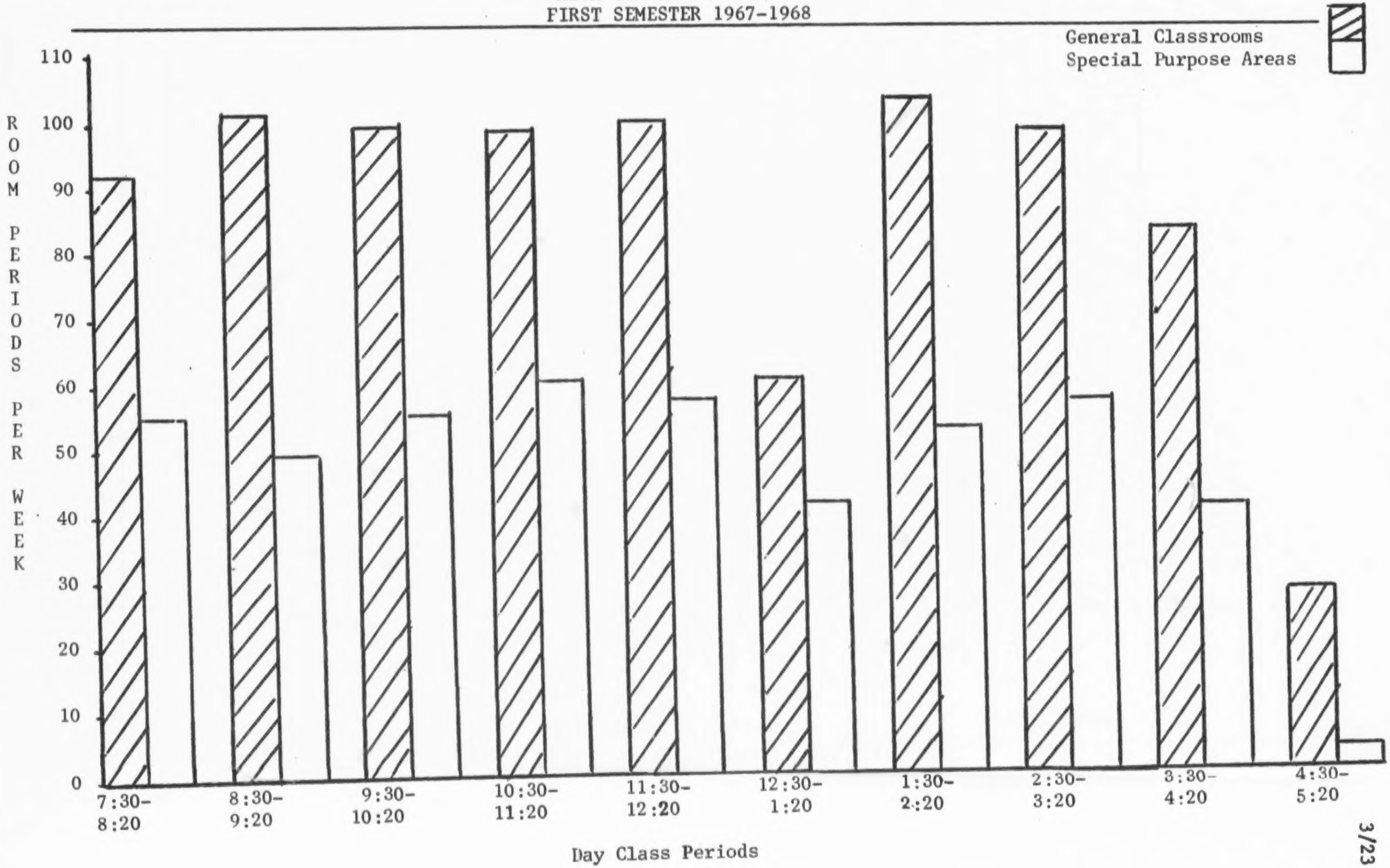

Figure 3.6

ROOM PERIODS OF USE PER WEEK BY CLASS PERIODS
PHOENIX COLLEGE
FIRST SEMESTER 1967-1968

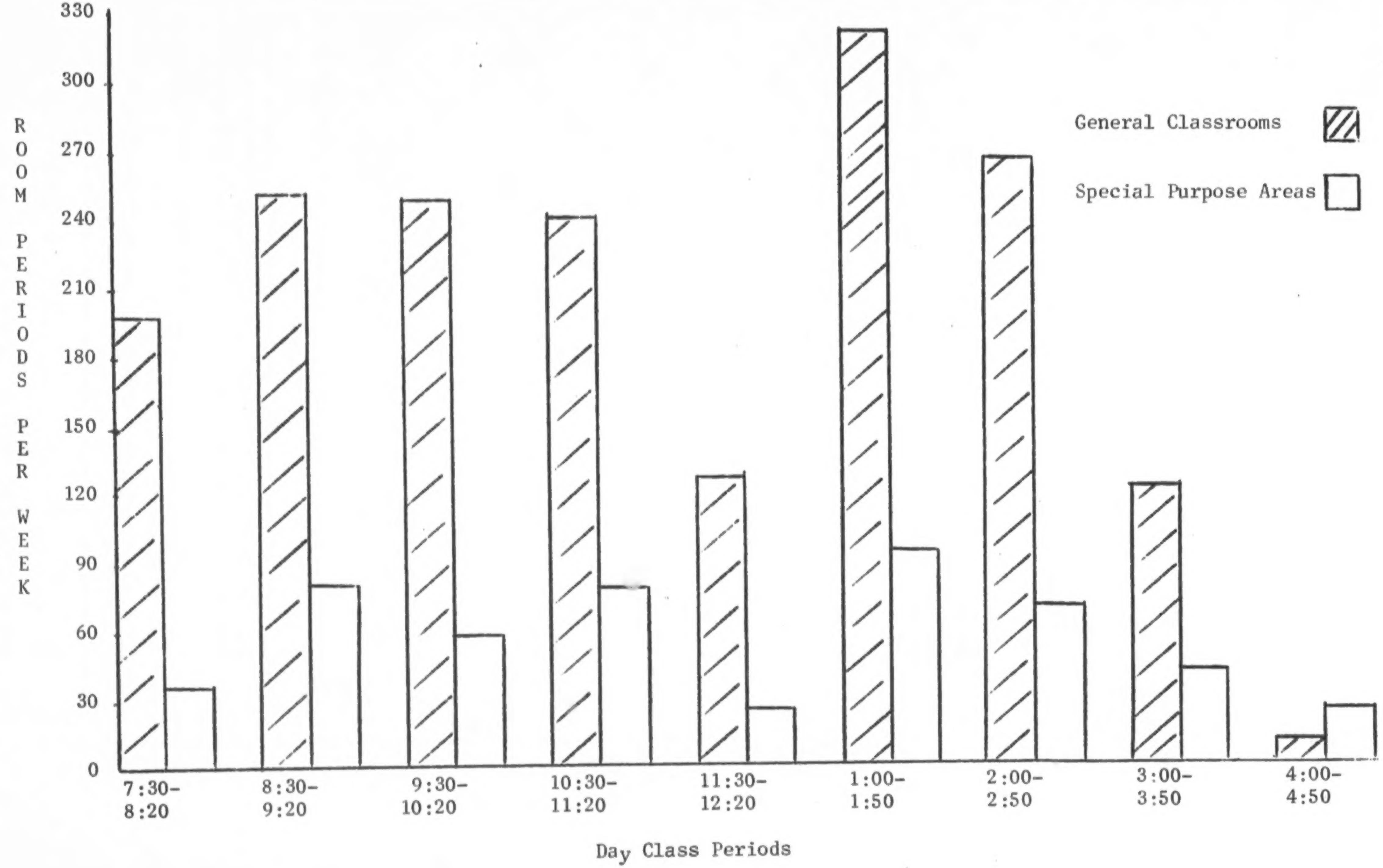

Figure 3.7

ROOM PERIODS OF USE PER WEEK BY DAY OF WEEK
GENERAL CLASSROOMS AND LECTURE ROOMS
ARIZONA JUNIOR COLLEGES
FIRST SEMESTER 1967-1968

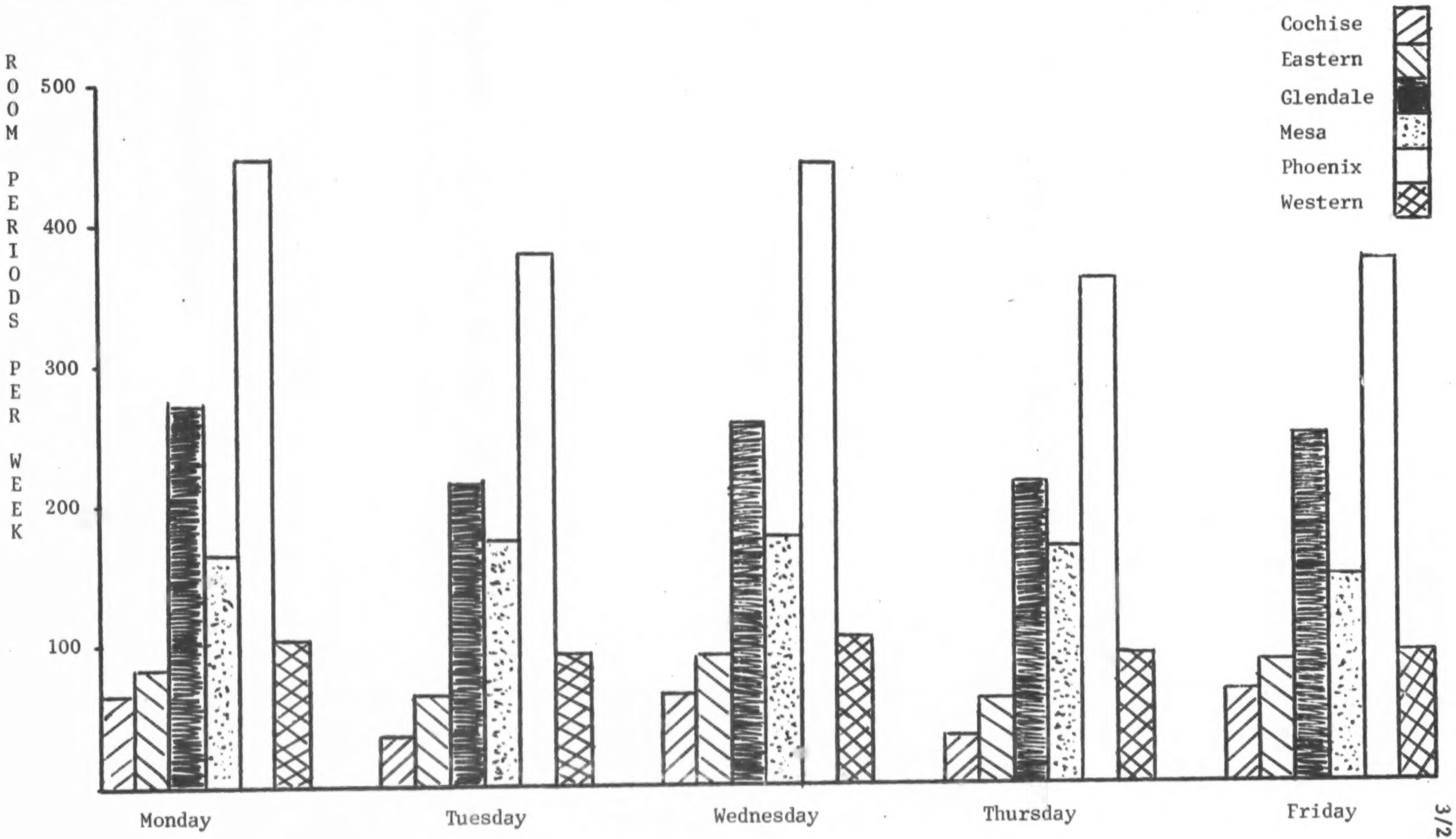

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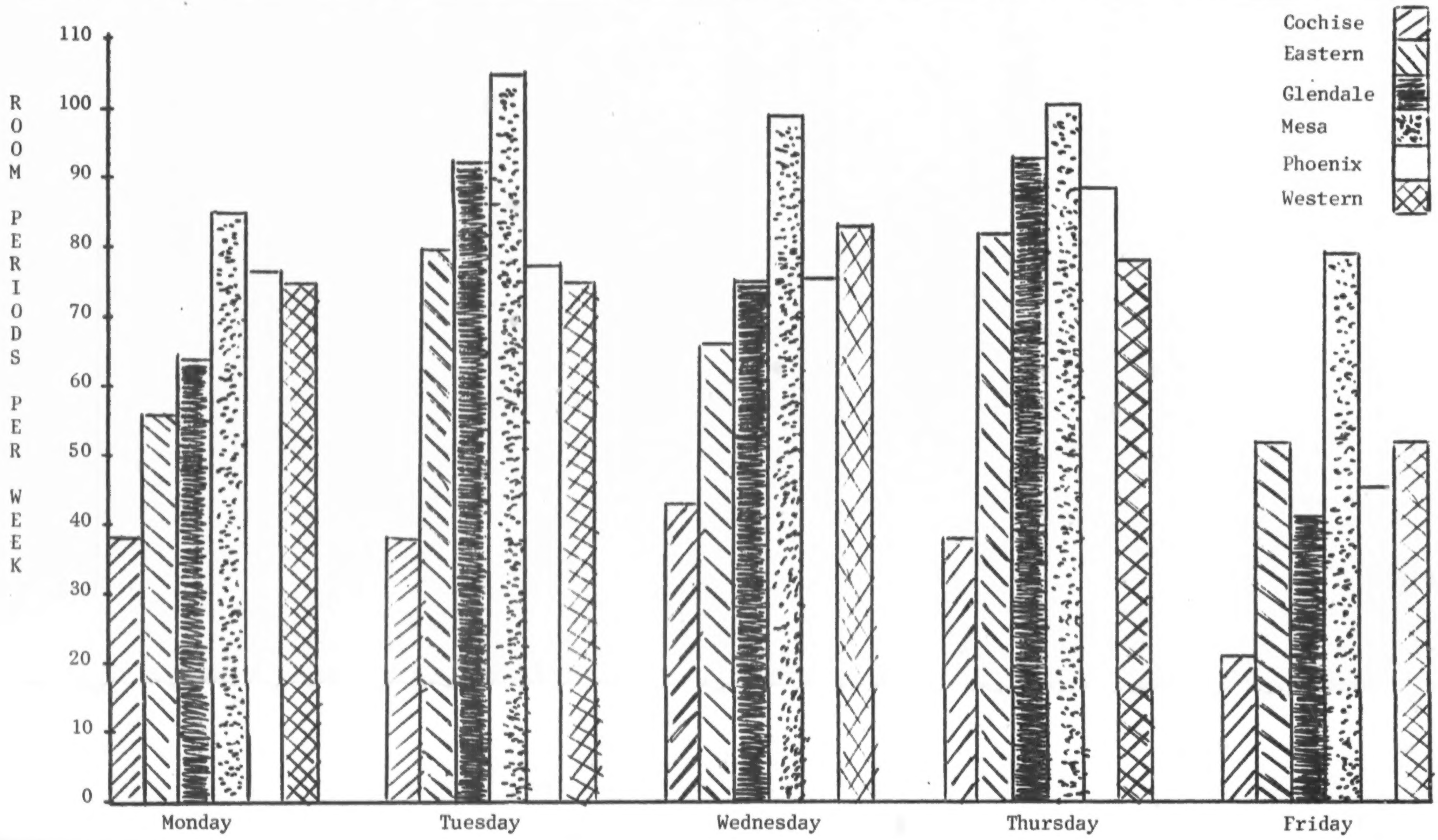
Figure 3.8

ROOM PERIODS OF USE PER WEEK
SPECIAL PURPOSE INSTRUCTIONAL AREAS
ARIZONA JUNIOR COLLEGES
FIRST SEMESTER 1967-1968



Figures 3.11 and 3.12 illustrate the percentage of total room utilization for the school week of five days for each of the six colleges. An eight period day was assigned the value of 100 percent utilization. In some cases, classes were held more than eight periods per day and therefore made percentages of utilization in excess of 100 percent possible. A closer examination of Figures 3.11 and 3.12 reemphasized the fact that special purpose areas were generally used less during the week than were general classrooms, but, as was said above, this is typical. On Friday, special purpose area percentage of utilization was relatively low, except at Mesa, while on that same day, general classroom percentages of utilization were relatively high.

Finally, it is very important that it be understood that the above utilization statistics relate to regularly scheduled daytime activities only. There is use beyond that indicated, for example, for student activities such as clubs, for faculty meetings, and for conferences and institutes (sometimes by statewide groups). Furthermore, the data do not show and were not intended to show nighttime use of instructional areas. Some institutions, for example Phoenix College, make heavy use of facilities at night.

Figure 3.9

PERCENTAGE ROOM PERIOD UTILIZATION PER WEEK BY PERIOD OF THE DAY
GENERAL CLASSROOMS
ARIZONA JUNIOR COLLEGES
FIRST SEMESTER 1967–1968

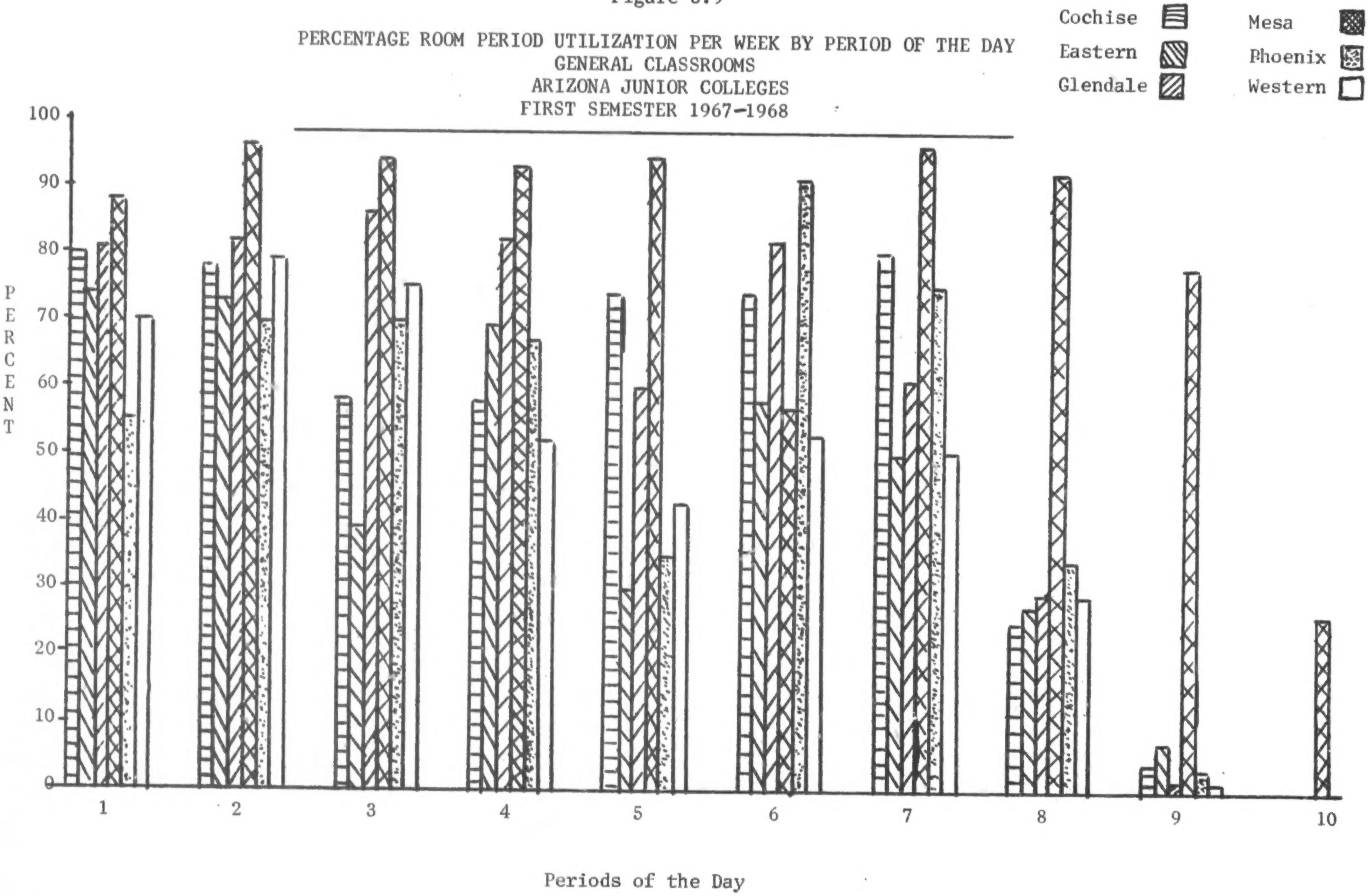


Figure 3.10

PERCENTAGE ROOM PERIOD UTILIZATION PER WEEK BY PERIOD OF THE DAY
SPECIAL PURPOSE AREAS
ARIZONA JUNIOR COLLEGES
FIRST SEMESTER 1967-1968

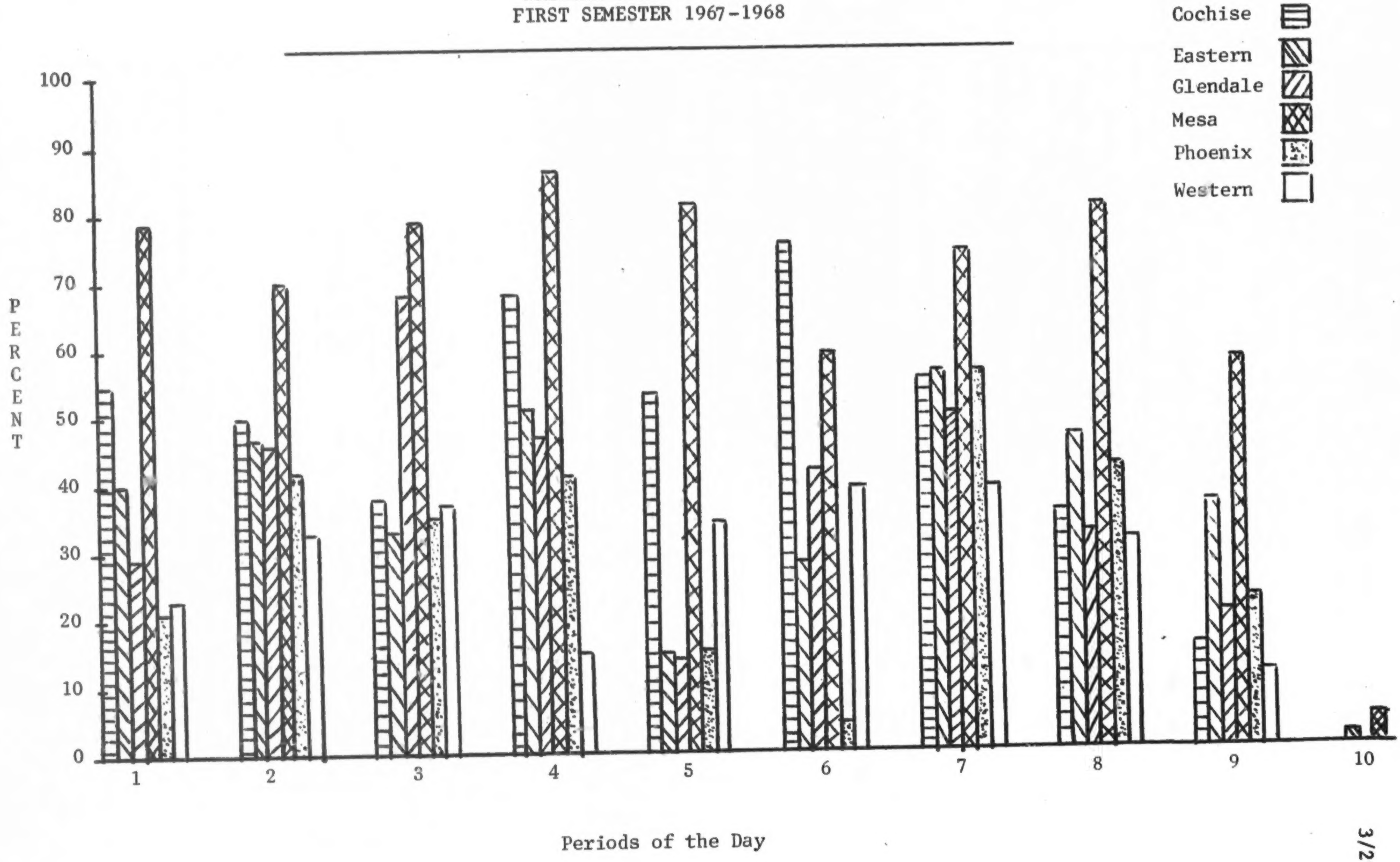


Figure 3.11

PERCENTAGE ROOM PERIOD UTILIZATION PER WEEK BY DAYS OF THE WEEK
GENERAL CLASSROOMS
ARIZONA JUNIOR COLLEGES, FIRST SEMESTER 1967-1968

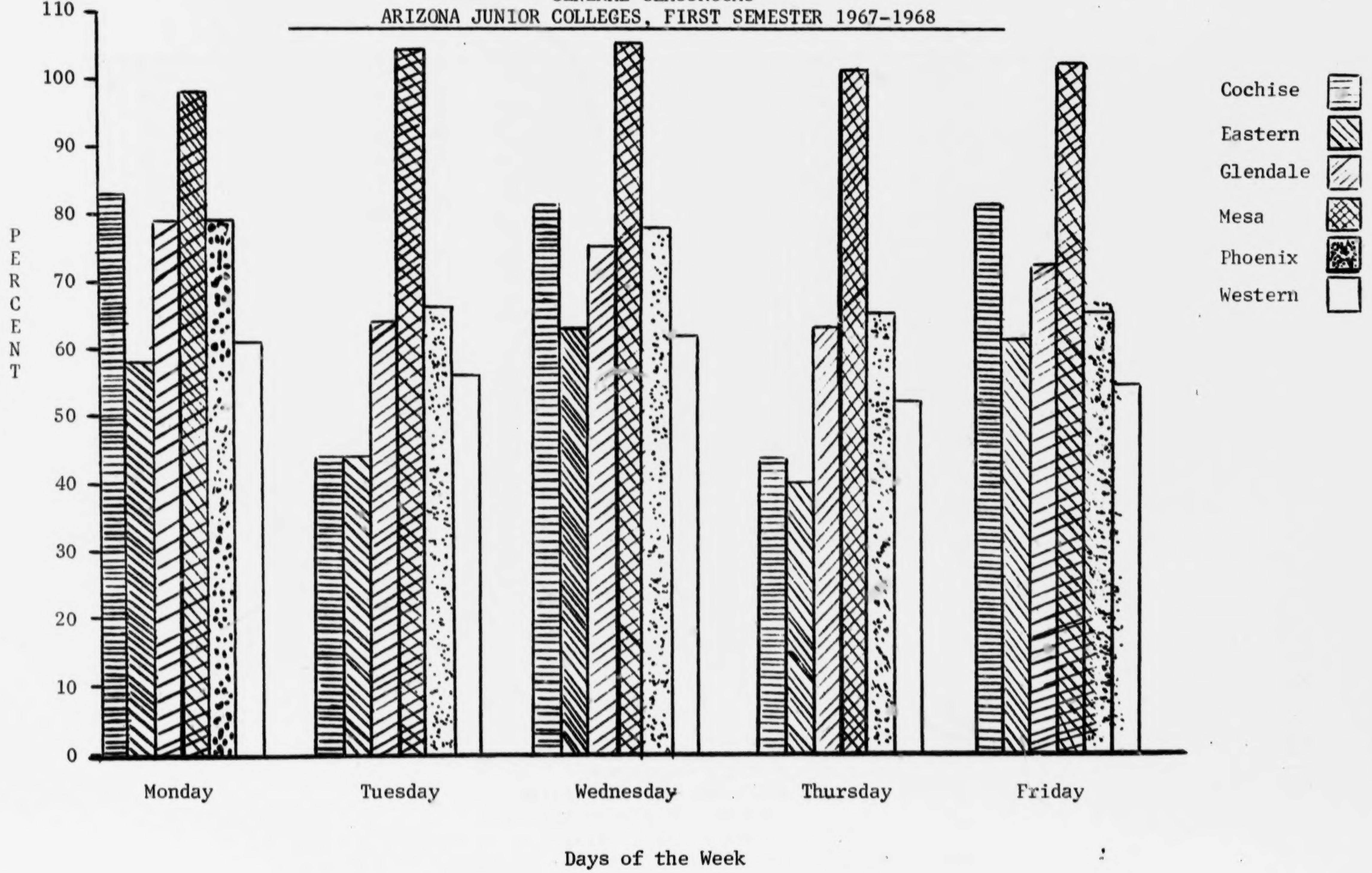
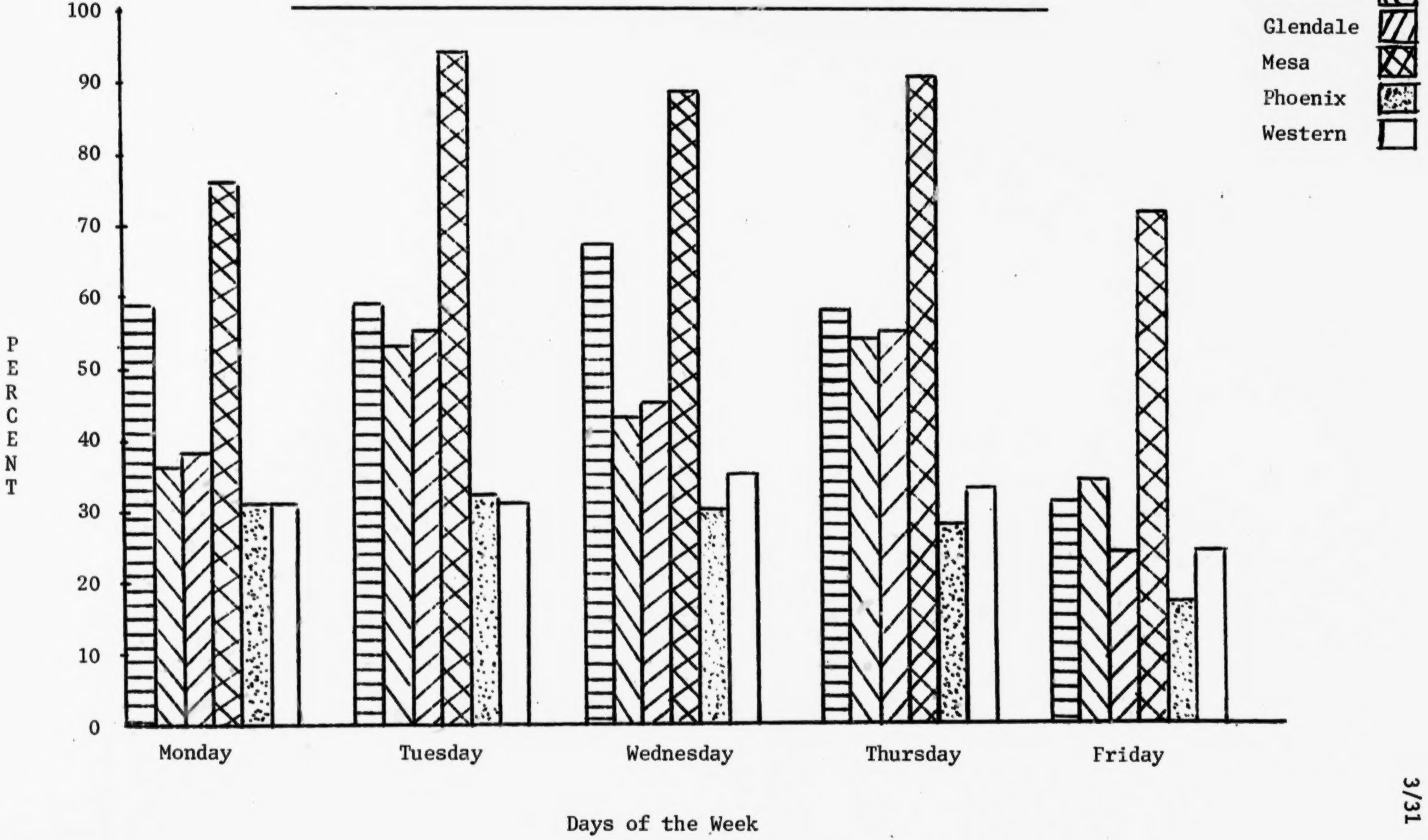


Figure 3.12

PERCENTAGE ROOM PERIOD UTILIZATION PER WEEK BY DAYS OF THE WEEK
SPECIAL PURPOSE AREAS
ARIZONA JUNIOR COLLEGES, FIRST SEMESTER 1967-1968



CHAPTER IV

CHAPTER IV

INSTRUCTIONAL PERSONNEL AND STUDENT PERSONNEL SPECIALISTS

Much of the responsibility for accomplishing the stated objectives of any junior college rests with two groups of professionals: the instructional personnel and the student personnel specialists. Descriptive information concerning the former is presented in the first main section of this chapter. The second main section provides the same type of information about the latter group, with additional information dealing with the environment in which student personnel specialists operate.

INSTRUCTIONAL PERSONNEL

No aspect of the present status and future needs of junior colleges warrants more attention than the instructional personnel. The quality of the instructional program is largely dependent on the quality of the teaching staff. Salaries of the teaching staff constitute the largest single budgetary expenditure of the institutions. Consequently, it seemed that some data about the instructional personnel in the Arizona Junior Colleges were appropriate.

During the fall of 1967 questionnaires were sent out to the instructional personnel in the then existent six Arizona Junior Colleges. The questionnaire returns and certain other data were then used as a basis for writing the sections of this chapter that deal with the number and assignment of personnel, professional experience, professional preparation, teaching load, and extent of turnover of personnel in the six institutions. This section reports the findings on the above topics. Each topic is covered in a subsection. The first subsection reported is about the number and assignment of instructional personnel.

NUMBER AND ASSIGNMENT

A separate table is devoted to staffing and teaching load by department or subject matter field[1] at each of the junior colleges. Within each table the number of persons teaching in each field is given in the column entitled "Number of Persons" (Column 1). It should be understood that the numbers in Column 1 of Tables 4.1 - 4.6 refer to the number of persons working in the subject area, regardless of the amount of time they spend there.

A pattern is evident in that in five of the six colleges the English department had the greatest number of staff members, Cochise College being the exception. Also in five of the six colleges, the business department was second in terms of the number of personnel utilized. (At Cochise College the business department was first.) For all the junior colleges the physical education department was third in numbers of persons working therein.

A tally was made of departments or subject matter fields according to the number of persons teaching in each. The findings are recorded in Table 4.7, page 4/15. The table makes quite clear the size of the teaching staff in the departments or subject matter fields of the six colleges. The most significant fact is that 53 out of the 173 areas tallied had only one person working in the area (not necessarily full time, as is pointed out later). Forty more had two persons and 23 had three. Therefore, about two-thirds of the departments or subject matter fields employed three or less persons at least part time. The largest department was the English department in Phoenix College. It employed 26 teachers.

A second and perhaps more revealing column of data is that labeled as "Full-Time Teacher Equivalency" (FTTE) (Column 2). This column is a departmental sum of the proportions of their full teaching load that each person

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[1] Many subject matter fields were too limited in scope of offerings and number of persons employed therein to be organized as a department. When the word "department" is used in this chapter, it is intended to mean a subject matter field or group of related fields and not necessarily as a department.

TABLE 4.1

STAFFING AND TEACHING LOAD BY DEPARTMENTS
ARIZONA WESTERN COLLEGE OCTOBER 1967

Subject Matter Field or Department	Number of Persons (1)	Full-Time Teacher Equivalency (2)	Actual Student Load (3)	Department Total Contact Hours (4)	Hypothetical Student Load Per Full-Time Teacher* (5)	Hypothetical Student Contact Hours Per Full-Time Teacher* (6)
Agriculture	3	2.80	205	976	73	347
Anthropology	1	.33	75	225	227	675
Art	2	2.00	173	704	87	352
Biology	3	2.07	313	1398	185	409
Business	9	8.51	1933	5343	230	623
Chemistry	3	1.98	133	741	68	370
Economics	1	.16	60	60	375	382
Education	1	.40	75	225	187	562
English	13	10.32	957	2880	98	288
Foreign Language	2	1.65	121	481	68	143
Health and Phy. Ed.	7	6.08	1157	2746	213	493
History	1	.80	130	390	163	487
Home Economics	3	1.80	134	552	70	342
Journalism	1	.33	18	60	56	180
Mathematics	4	3.85	359	1352	94	355
Music	3	2.08	202	697	71	276
Nursing	2	.80	95	354	127	461

TABLE 4.1 (Concluded)

ARIZONA WESTERN

Subject Matter Field or Department	Number of Persons	Full-Time Teacher Equivalency	Actual Student Load	Department Total Contact Hours	Hypothetical Student Load Per Full-Time Teacher*	Hypothetical Student Contact Hours Per Full-Time Teacher*
Physical Science	4	3.01	321	1702	109	532
Philosophy	1	.60	128	384	213	640
Political Science	1	1.00	202	606	202	606
Psychology	2	1.40	292	633	212	515
Social Science	2	.77	128	384	157	477
Speech and Drama	3	2.50	168	478	75	216
Technology	6	5.57	284	1900	51	341

*Student load and contact hours for part-time teachers have been increased proportionately to a full-time basis. (See page 4/18)

TABLE 4.2

STAFFING AND TEACHING LOAD BY DEPARTMENTS
COCHISE COLLEGE OCTOBER 1967

Subject Matter Field or Department	Number of Persons	Full-Time Teacher Equivalency	Actual Student Load	Department Total Contact Hours	Hypothetical Student Load Per Full-Time Teacher*	Hypothetical Student Contact Hours Per Full-Time Teacher*
Aviation Tech.	1	.20	45	135	225	675
Anthropology	1	.53	99	272	186	510
Art	1	.69	40	240	58	347
Biology	2	.67	76	456	111	332
Botany	1	.25	22	66	88	264
Business	10	5.95	575	1897	125	400
Chemistry	4	1.82	113	908	125	482
Civil Tech.	1	.47	23	58	49	124
Drafting Tech.	1	1.00	53	318	53	318
Drama	1	.47	51	153	109	328
Economics	1	.25	32	96	128	384
English	8	5.83	721	2093	117	342
French	1	.44	24	140	54	315
Geography	1	.20	26	78	130	390
Geology	1	.20	30	150	150	750
Government	1	.20	42	126	210	630
Health	2	.47	89	209	191	451

TABLE 4.2 (Concluded)

COCHISE

Subject Matter Field or Department	Number of Persons	Full-Time Teacher Equivalency	Actual Student Load	Department Total Contact Hours	Hypothetical Student Load Per Full-Time Teacher*	Hypothetical Student Contact Hours Per Full-Time Teacher*
History	2	.80	169	507	199	596
Humanities	2	.61	166	746	268	122
Journalism	1	.50	19	45	38	90
Law Enforcement	3	1.37	160	480	107	326
Mathematics	4	3.15	325	929	86	268
Music	1	1.00	155	612	155	612
Philosophy	2	.43	78	234	181	542
Physical Ed.	4	1.60	763	1580	540	700
Physics	1	.15	28	56	187	373
Psychology	1	1.00	199	597	199	597
Speech	2	1.07	111	333	107	320
Sociology	1	.83	192	576	230	691
Spanish	3	1.69	152	539	156	430
Zoology	2	.77	140	515	156	667

*Student load and contact hours for part-time teachers have been increased proportionately to a full-time basis. (See page 4/18)

TABLE 4.3

STAFFING AND TEACHING LOAD BY DEPARTMENTS
EASTERN ARIZONA COLLEGE OCTOBER 1967

Subject Matter Field or Department	Number of Persons	Full-Time Teacher Equivalency	Actual Student Load	Department Total Contact Hours	Hypothetical Student Load Per Full-Time Teacher*	Hypothetical Student Contact Hours Per Full-Time Teacher*
Agriculture	2	1.26	73	417	56	300
Anthropology	1	.20	33	99	165	495
Art	2	2.00	322	831	161	415
Biology	4	2.47	419	1616	205	369
Business	6	6.00	663	2509	111	418
Chemistry	2	2.00	173	1082	86	541
Engineering	2	.34	27	107	108	258
English	8	6.81	893	2959	133	429
Foreign Language	3	1.89	81	361	44	193
Forestry	1	.54	20	92	37	171
Geography	1	.19	47	141	247	754
Health and Phy. Ed.	6	5.30	890	2024	157	355
History	2	.97	163	469	169	487
Home Economics	2	2.00	183	461	91	231
Industrial and Technical Education	8	6.19	549	2813	160	428
Journalism	1	.54	19	143	35	265
Mathematics	2	2.00	255	898	128	449

TABLE 4.3 (Concluded)

EASTERN ARIZONA

Subject Matter Field or Department	Number of Persons	Full-Time Teacher Equivalency	Actual Student Load	Department Total Contact Hours	Hypothetical Student Load Per Full-Time Teacher*	Hypothetical Student Contact Hours Per Full-Time Teacher*
Music	3	2.14	268	1055	110	606
Physical Science	1	.27	46	276	170	104
Psychology	2	.93	216	643	383	345
Physics	1	.53	20	120	37	225
Political Science	1	.44	86	208	195	475
Religion	1	1.00	196	392	196	392
Sociology	2	1.20	150	450	125	375
Speech	2	1.29	185	541	138	555

*Student load and contact hours for part-time teachers have been increased proportionately to a full-time basis. (See page 4/18)

TABLE 4.4

STAFFING AND TEACHING LOAD BY DEPARTMENTS
GLENDALE COMMUNITY COLLEGE
OCTOBER 1967

Subject Matter Field of Department	Number of Persons	Full-Time Teacher Equivalency	Actual Student Load	Department Total Contact Hours	Hypothetical Student Load Per Full-Time Teacher*	Hypothetical Student Contact Hours Per Full-Time Teacher*
Agriculture	1	.47	112	354	240	759
Art	4	4.00	448	2066	112	517
Biology	5	5.00	901	2984	180	597
Business	12	11.67	1517	5775	131	497
Chemistry	3	2.60	510	1546	195	513
Drafting	2	.87	133	910	150	105
Drama	1	1.00	92	332	92	332
Economics	1	1.00	154	462	154	462
Education	1	.40	81	243	203	607
Electronics	3	2.75	284	1179	108	432
Engineering	1	.75	96	96	384	384
English	21	17.63	2197	6615	123	372
English Lang. Skills	10	3.53	358	1183	96	350
Foreign Language	4	3.80	349	1356	92	359
History	6	4.91	994	2982	200	601
Geology	1	.31	24	144	77	469
Journalism	1	.67	36	180	54	270

TABLE 4.4 (Concluded)

GLENDALE

Subject Matter Field or Department	Number of Persons	Full-Time Teacher Equivalency	Actual Student Load	Department Total Contact Hours	Hypothetical Student Load Per Full-Time Teacher*	Hypothetical Student Contact Hours Per Full-Time Teacher*
Home Economics	2	2.00	177	662	89	331
Mathematics	9	8.69	1203	3838	139	442
Music	4	4.00	467	1552	117	338
Nursing	2	2.00	79	244	39	122
Philosophy	3	3.00	511	1533	341	511
Physical Ed.	13	13.00	2361	5395	182	415
Physics	4	2.67	346	1193	113	445
Political Science	3	.59	125	494	195	545
Psychology	4	3.67	650	1970	176	539
Reading	4	2.83	436	1302	157	467
Social Science	2	1.20	210	683	185	581
Sociology	3	2.10	396	1198	182	550
Speech	3	2.33	299	741	134	349

*Student load and contact hours for part-time teachers have been increased proportionately to a full-time basis. (See page 4/18)

TABLE 4.5

STAFFING AND TEACHING LOAD BY DEPARTMENTS
MESA COMMUNITY COLLEGE
OCTOBER 1967

Subject Matter Field or Department	Number of Persons	Full-Time Teacher Equivalency	Actual Student Load	Department Total Contact Hours	Hypothetical Student Load Per Full-Time Teacher*	Hypothetical Student Contact Hours Per Full-Time Teacher*
Agriculture	2	1.20	177	402	152	405
Art	5	5.00	506	2355	101	471
Biology	5	5.00	851	2463	170	493
Business	12	11.80	1319	4516	112	383
Chemistry	3	2.80	420	1190	149	424
Drafting Tech.	2	2.00	126	675	68	337
Drama	1	1.00	49	224	49	224
Economics	1	.40	86	258	215	323
Electronics	3	2.60	217	755	85	283
English	17	14.00	2062	6186	129	434
French	1	.80	87	348	109	435
German	1	.80	75	300	94	375
Geology	1	.50	70	210	140	420
History	7	5.00	1059	3357	264	853
Home Economics	1	1.00	153	421	153	421
Journalism	1	1.00	24	120	24	120
Library Tech.	2	.40	37	111	93	278

TABLE 4.5 (Concluded)

MESA

Subject Matter Field or Department	Number of Persons	Full-Time Teacher Equivalency	Actual Student Load	Department Total Contact Hours	Hypothetical Student Load Per Full-Time Teacher*	Hypothetical Student Contact Hours Per Full-Time Teacher*
Mathematics	7	6.47	977	2824	147	368
Music	3	3.00	438	1406	146	369
Practical Nursing	2	2.00	55	822	27	411
Philosophy	2	1.60	322	966	206	619
Physical Ed.	10	8.93	1852	4320	219	521
Physics	2	.90	83	249	94	283
Political Science	2	1.07	275	637	671	343
Psychology	4	2.40	537	1611	232	698
Reading	3	3.00	468	1331	156	377
Social Science	3	2.20	498	1494	230	691
Sociology	1	.40	97	276	230	435
Spanish	1	1.00	117	458	117	458
Speech	3	2.07	319	651	186	387
Audio-Visual	1	1.00				

*Student load and contact hours for part-time teachers have been increased proportionately to a full-time basis. (See page 4/18)

TABLE 4.6

STAFFING AND TEACHING LOAD BY DEPARTMENTS
PHOENIX COLLEGE OCTOBER 1967

Subject Matter Field or Department	Number of Persons	Full-Time Teacher Equivalency	Actual Student Load	Department Total Contact Hours	Hypothetical Student Load Per Full-Time Teacher*	Hypothetical Student Contact Hours Per Full-Time Teacher
Anthropology	2	.80	217	651	271	358
Art	4	3.67	772	2932	155	809
Biology	9	8.37	932	3794	116	457
Business	19	18.00	2635	9616	158	506
Chemistry	6	5.53	620	2252	90	412
Drafting Tech.	5	3.65	248	1447	83	404
Drama	1	.40	68	260	170	650
Economics	2	1.60	328	984	207	617
Electronics	7	3.97	285	1278	87	348
Engineering	2	.65	96	384	137	549
English	26	23.02	3570	10545	154	460
Food Service	2	1.20	37	83	21	377
Foreign Language	6	4.12	553	2264	120	472
Geography	1	.57	112	336	196	588
Geology	2	.70	134	402	254	253
History	9	2.57	978	2920	213	505
Home Economics	6	5.40	570	1725	104	317

TABLE 4.6 (Concluded)

PHOENIX

Subject Matter Field or Department	Number of Persons	Full-Time Teacher Equivalency	Actual Student Load	Department Total Contact Hours	Hypothetical Student Load Per Full-Time Teacher*	Hypothetical Student Contact Hours Per Full-Time Teacher*
Journalism	1	.60	25	125	42	208
Law Enforcement	2	1.20	247	1015	167	639
Mathematics	11	10.73	1462	4611	135	428
Medical Records Sci.	1	.63	72	216	114	345
Music	6	5.80	877	2422	150	415
Nursing	7	3.00	270	1581	93	516
Philosophy	3	2.20	520	1511	360	434
Photography	1	1.00	75	390	75	390
Physical Ed.	14	12.47	2831	6522	235	540
Physics	7	4.82	589	1952	112	365
Political Science	5	1.48	470	920	731	446
Psychology	8	6.80	1307	4017	191	586
Reading	5	5.00	832	2496	166	499
Social Science	2	1.03	209	627	199	597
Sociology	4	2.80	577	1731	208	623
Speech	6	3.56	565	1638	165	449

*Student load and contact hours for part-time teachers have been increased proportionately to a full-time basis. (See page 4/18)

TABLE 4.7

NUMBER OF DEPARTMENTS OR SUBJECT MATTER FIELDS IN ARIZONA JUNIOR COLLEGES BY SIZE OF TEACHING STAFF, OCTOBER 1967

	NUMBER OF DEPARTMENTS*						
Number of Teachers	Arizona Western	Cochise	Eastern	Glendale	Mesa	Phoenix	Total
1	7	17	8	7	9	5	53
2	5	7	10	4	7	7	40
3	6	2	2	6	6	1	23
4	2	3	1	6	1	2	15
5				1	2	3	6
6	1		2	1		5	9
7	1				2	3	6
8		1	2			1	4
9	1			1		2	4
10		1		1	1		3
11						1	1
12				1	1		2
13	1			1			2
14						1	1
15							0
16							0
17					1		1
18							0
19						1	1
20							0
21						1	1
26						1	1
TOTALS	24	31	25	29	30	34	173

*Many of the smaller "departments" really were not departments as such but merely subject matter fields or curriculum areas.

in the department spent in that particular department or curriculum area. Many persons were teaching in two departments. Then, too, a number of persons taught part-time and devoted the remainder of their work-load to duties such as administration and counseling. Some instructional personnel work for the Junior Colleges only on a part-time basis.

Column 2 of Tables 4.1 through 4.6 gives a better idea of the real staff size of a given department, because it gives the size in terms of full-time equivalency. For example, a department may have had four persons working in it one-fourth time each, and thus had the full-time equivalency of only one teacher. It is apparent then that comparisons among the various departments or between departments in different institutions could better be made on the basis of Column 2, rather than Column 1. The extent of part-time personnel employed within the department may be readily deduced from a comparison of Columns 1 and 2. Lastly, one may note the extreme range in department or subject matter field size throughout the six junior colleges. The extremes being the physics area at Cochise College and the English department at Phoenix with .15 and 23.02 FTTE, respectively. The median full-time teacher equivalency for all six colleges combined was 1.67 per program area -- a further indication that the staff of the typical department or subject matter area is small in number.

DEPARTMENTAL STUDENT LOAD
AND CONTACT HOURS

The sum of the students enrolled in all classes offered by the department or subject matter fields generates the figures for the "Actual Student Load Column" (Column 3 of Tables 4.1 - 4.6). As one might suspect, the English departments at the six institutions enrolled the greatest number of students, while the business and physical education departments were nearly equal in numbers of students enrolled in the departments. Column 3 gives an indication of the size of the student population served by each program area.

On the basis of actual student load, as well as on certain other bases, the English department in Phoenix College with 3,570 students was the largest department among all of the junior colleges. The physical education department at this same college was second. The smallest actual student load was 18 in journalism at Arizona Western College. The median actual student load for all departments of all colleges was 196 students, while on a college by college basis the medians were as follows: Arizona Western, 151; Cochise, 89; Eastern Arizona, 173; Glendale, 348; Mesa, 246; and Phoenix, 520.

The "Department Total Contact Hours" (Column 4) of Tables 4.1 through 4.6 gives an idea of the duration of time the students spent per week in the department classes, and therefore provide another estimate of departmental work loads. A contact hour means one hour with one student regardless of whether the hour is spent in an academic classroom, a laboratory, or in a gymnasium. Thus, one hour with 25 students equals 25 contact hours. The product of the number of students in each class times the number of hours the class meets per week yields the contact hours. The total departmental contact hours column (Column 4) illustrates the great range in number of contact hours from program area to program area, and from college to college. For example, when a full-time teaching equivalent in chemistry is compared with a full-time teaching equivalent in home economics at Eastern Arizona College, the difference in contact hours is about 100 percent. The range of contact hours per week was found to be between the high of 10,545 in English at Phoenix College, to the low of 45 in journalism at Cochise College.

It was decided that there would be merit in determining the average department contact hours per student for each college, and for the six colleges together. This was done by dividing the total of all contact hours per week for each college (and for all six colleges) by the total student load per week per college (and again for all six).

The findings were as follows:

Arizona Western	3.3	Mesa	3.1
Cochise	3.2	Phoenix	3.2
Eastern Arizona	3.5	All six colleges	3.2
Glendale	3.2		

It was interesting to note how near alike the results were for five of the six institutions. Apparently Eastern Arizona College is running an educational program requiring more contact hours per week per department or program area for each student than is typical of the other institutions. The tables make it possible for any one given department to compare its weekly contact hours per student with those of other departments in the same college and with similar departments in the other colleges.

HYPOTHETICAL STUDENT LOAD AND CONTACT HOURS PER FULL-TIME TEACHER

Columns 5 and 6 of Tables 4.1 through 4.6 do not refer to actual conditions; they are calculations of hypothetical situations. From the individual instructor's actual student load, a simple proportion was constructed to yield his hypothetical student load (Column 5) assuming he had been engaged full-time in the department and that the load would have been in proportion to what actual conditions were. This same procedure was employed to arrive at hypothetical student contact hours per week (Column 6) per full-time teacher. The figures listed in each column are hypothesized departmental averages.

Column 5 makes possible theoretical comparisons of student load per full-time teacher among the various subject fields. It is an attempt to equate the student loads of part-time teachers to full-time conditions. Admittedly, part-time teachers with extremely heavy student loads for the time devoted to teaching might not have had proportionately as heavy loads had they been teaching full time. The technique employed, however, does permit a degree of comparability. Column 6 provides a similar basis for comparing hypothetical contact hours per week among the various departments of an institution. For both Columns 5 and 6, the larger the number in a given department, the greater is the indication that the department is carrying a heavy load per full-time teacher.

To make some comparisons among the six institutions with respect to hypothetical student load per full-time teacher and the hypothetical student contact hours per full-time teacher, the data from the last two columns of Tables 4.1 - 4.6 were consolidated into the summary tables, Tables 4.8 and 4.9. These tables make possible, not only comparisons among the departments of a given institution, but also facilitate comparisons among the six institutions for any given department. As one peruses the hypothetical student loads among the departments at the six institutions, the great range of student loads becomes apparent. The extreme being at Phoenix College where the food service department has a hypothetical student load of 21 students, while the political science department at the same college has a hypothetical student load of 731 students. A wide range also prevails among the departments of the other junior colleges. This is indicated more specifically later.

The "Hypothetical Student Contact Hours" shown in Table 4.9 not only considers the student load, but the duration of time professors spend with the students each week. Here again the extremes of ranges seem impressive. For example, the art department of Phoenix has an average of 809 hypothetical student contact hours per week, while industrial and technical education at Cochise has 90 hypothetical student contact hours per week. In general, the departments of business, chemistry, and English carry the heaviest hypothetical student contact hours per week.

To make an overall comparison of hypothetical student loads and student contact hours per teacher, Table 4.10 was made. This table shows the mean, median, the low, and the high for each college for student loads and contact

TABLE 4.8

HYPOTHETICAL* STUDENT LOAD PER WEEK PER FULL-TIME TEACHER BY DEPARTMENTS IN ARIZONA JUNIOR COLLEGES, OCTOBER, 1967

Depart. or Instruct. Area	Arizona Western	Cochise	Eastern Arizona	Glendale	Mesa	Phoenix
Agriculture	73		56	240	152	
Aviation Tech.		225				
Anthropology	227	186	165			271
Art	87	58	161	112	101	155
Biology	185	456	205	180	170	116
Botany		88				
Business	230	125	111	131	112	158
Chemistry	68	125	86	195	149	90
Civil Tech.		49				
Draft. Tech.		53		150	68	83
Drama		109		92	49	170
Economics	375	128		154		207
Education	187			203	215	
Electronics				108	85	87
Engineering			108	384		137
English	98	117	133	132	129	154
Eng. Lang. Skill			44	96		
Food Service						21
Foreign Lang.	68			92		120
Forestry			37			
French		54			109	
Geography		130	247			196
Geology		150		77	140	254
German					94	
Government		210				
Health		191				
Health & P.E.	213		157			
History	163	199	169	200	264	213
Home Economics	70		91	89	153	104
Humanities		268				
Ind. & Tech. Ed.			160			
Journalism	56	38	35	54	24	42

(Cont. p. 4/21)

TABLE 4.8 (Continued)

Depart. or Instruct. Area	Arizona Western	Cochise	Eastern Arizona	Glendale	Mesa	Phoenix
Law En.		107				167
Library Tech.	0	0	0	0	0	0
Mathematics	94	86	128	139	147	135
Med. Rec. Sci.						114
Music	71	155		117	146	150
Nursing	127			39		93
Philosophy	213	161		341	206	360
Photography						75
Phys. Education		540		182	219	235
Phys. Science	109		170			
Physics		187	37	113	94	112
Political Sci.	202		195	195	671	731
Pract. Nursing					27	
Psychology	212	199	383	176	232	191
Reading				157	156	166
Religion			196			
Social Science	107			185	230	199
Sociology		230	125	182	230	208
Spanish		156			117	
Speech		107	138	134	186	165
Speech & Drama	75					
Technology	51					
Zoology		156				

*Student load and contact hours for part-time teachers have been increased proportionately to a full-time basis.

TABLE 4.9

HYPOTHETICAL* STUDENT CONTACT HOURS PER WEEK PER FULL-TIME TEACHER BY DEPARTMENTS IN ARIZONA JUNIOR COLLEGES
OCTOBER, 1967

Depart. or Instruct. Area	Arizona Western	Cochise	Eastern Arizona	Glendale	Mesa	Phoenix
Agriculture	347		300	759	405	
Aviation Tech.		675				
Anthropology	675	510	495			358
Art	352	347	415	517	471	809
Biology	409	332	369	597	493	457
Botany		264				
Business	623	400	418	497	383	506
Chemistry	370	482	541	513	424	412
Civil Tech.		124				
Draft. Tech.		318		105	337	404
Drama		328		332	224	650
Economics	382	384		462		617
Education	562			607	323	
Electronics				432	283	348
Engineering			258	384		549
English	288	342	429	372	434	460
Eng. Lang. Skills			193	350		
Food Service						377
Foreign Lang.	143			359		472
Forestry			171			
French		315			435	
Geography		390	754			588
Geology		750		469	420	253
German					375	
Government		630				
Health		451				
Health & P.E.	493		355			
History	487	596	487	601	853	505
Home Economics	342	122	231	331	421	317
Humanities	0	0	0	0	0	0
Ind. & Tech. Ed.		90	428			
Journalism	180	326	265	270	120	208

(Cont. P. 4/23)

TABLE 4.9 (Continued)

Depart. or Instruct. Area	Arizona Western	Cochise	Eastern Arizona	Glendale	Mesa	Phoenix
Law En.						639
Library Tech.		93			278	
Mathematics	355	268	449	442	368	428
Med. Rec. Sci.						345
Music	276	612		338	369	415
Nursing	461			122		516
Philosophy	640	542		511	619	434
Photography						390
Phys. Education		700		415	521	540
Phys. Science	532		104			
Physics		373	225	445	283	365
Political Sci.	606		475	545	343	446
Pract. Nursing					411	
Psychology	515	597	345	539	698	586
Reading				467	377	499
Religion			392			
Social Science	477	691		581	691	597
Sociology			375	550	435	623
Spanish		430			458	
Speech		320	555	349	387	449
Speech & Drama	216					
Technology	341					
Zoology		667				

*Student load and contact hours for part-time teachers have been increased proportionately to a full-time basis.

TABLE 4.10

CENTRAL TENDENCIES AND EXTREMES ON STUDENT LOAD AND CONTACT HOURS PER WEEK PER FULL-TIME TEACHER, ARIZONA JUNIOR COLLEGES
OCTOBER 1967

College	WEEKLY HYPOTHETICAL STUDENT LOAD PER FULL-TIME TEACHER				WEEKLY HYPOTHETICAL STUDENT CONTACT HOURS PER FULL-TIME TEACHER			
	Mean	Median	Low	High	Mean	Median	Low	High
Arizona Western	142	118	51	375	420	395	143	675
Cochise	152	130	38	540	431	390	90	750
Eastern Arizona	138	133	35	383	385	392	104	754
Glendale	155	145	39	384	442	454	105	759
Mesa	159	147	24	671	421	408	120	853
Phoenix	172	155	21	731	472	457	208	809

hours per full-time teacher. Among other things the table indicates the highest mean, 172, and median, 155, for student load at Phoenix College, while the lowest mean, 138, is recorded for Eastern Arizona and the lowest median, 118, for Arizona Western College. Wide ranges between highs and lows are common.

The highest mean and median numbers of contact hours per full-time teacher are also recorded for Phoenix College, 472 and 457 respectively, with Eastern Arizona College showing the lowest mean, 385, and Cochise College the lowest median, 390, per full-time teacher. Here again, the ranges are wide between high and low numbers of contact hours per full-time teacher.

PROFESSIONAL PREPARATION

Data obtained from the previously mentioned questionnaires completed by the faculty at each of the junior colleges were compiled for Table 4.11.

TABLE 4.11

COLLEGE PREPARATION OF INSTRUCTIONAL STAFF*
ARIZONA JUNIOR COLLEGES
1967 - 1968

	Number of Persons and Highest Degree Held			
Name of College	Bachelor's	Master's	Ed.S.	Doctor's
Eastern Arizona	4	43		2
Arizona Western	2	58		4
Phoenix	3	144	1	18
Cochise	9	38		1
Glendale	0	103	1	8
Mesa	4	95		2
Statewide Totals	22	481	2	35
Percentages of Grand Total	4.1	89.4	.3	6.4

*Based on a return of about 97 percent of questionnaires, including part-time academic faculty. Several persons had two master's degrees. Study beyond highest degree was common.

On the basis of a 97 percent return of questionnaires, the data revealed a master's degree was the terminal degree earned by 481 members of the junior college faculties surveyed. That number accounts for 90 percent of the degreed faculty at the junior colleges. Those faculty members holding bachelor's and doctor's degrees totaled 4.1 and 6.1 percent respectively. Two faculty members hold the educational specialist degree amounting to 0.3 percent of the academic preparation of the junior college faculties at the six Arizona institutions surveyed.

The 1960 edition of the Encyclopedia of Educational Research reports Colvert[1] as indicating a nationwide report on the highest academic degree held by junior college teachers. The data were on 8,000 teachers for the school year 1956-1957. The percentage distribution was as follows:

Degree	Percentage
No degree	3.3
Baccalaureate	18.4
Master's	61.1
Doctorate	9.2

Although the above data were eleven years old at the time of this writing, they do provide an interesting basis for comparison with the Arizona situation. Evidently about 8 percent of those to whom Colvert sent questionnaires did not respond.

Blocker[2] reported in 1965 on a nationwide survey about this same matter. He cited the following findings:

Degree	Percentage
None indicated	1.2
Baccalaureate	18.4
Master's	72.2
Doctorate	7.2

His findings also are interesting to compare with those for Arizona's junior colleges. It should be noted that the emphasis has not been on the doctorate.

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[1] Colvert, Clyde C. "Salaries of Junior College Teachers and Administrators in the United States for 1956-57," Junior College Journal 28:35-43: 1957. (As reported in the Encyclopedia of Educational Research, Chester W. Harris, editor, The Macmillan Company, New York, 1960, p. 742.)

[2] Clyde E. Blocker, "Are Our Faculties Competent?" Junior College Journal, Vol. 36, No. 4 (December 1965), 12-17.

Since teaching rather than research is the main concern of junior college instructors the narrow specialization of the Ph.D. degree isn't necessarily the best preparation for these persons.

A quotation from the ERIC Clearinghouse for Junior College Information[1] indicates the wisdom of one of the current certification requirements in Arizona for junior college teachers; namely, the requirement that these persons take a basic course about junior colleges.

> Junior college faculty members who have had a basic course in the nature and functions of junior colleges and who are frequently reorientated to junior college objectives are more receptive to the function and purposes of these colleges and probably experience less frustration with "open-door" policies than do other junior college teachers. They see themselves as responsible for students rather than for subjects.

PROFESSIONAL EXPERIENCE

This description of the breadth and nature of professional experience possessed by Arizona Junior College personnel omits experience other than teaching. Teaching experience was divided into four categories as is evidenced in Table 4.12. A close examination of the table shows a range of average total teaching experience of from 8.1 years to 14.1 years at Arizona Western College and Phoenix College, respectively, as of the Fall of 1967. The remaining four institutions all averaged approximately 10 years teaching experience for their instructional personnel. Prior secondary school experience appears to predominate at all six colleges. Such experience averaged 6.8 years for the 388 teachers who had taught in the high schools. Only Arizona Western deviated greatly with a low of 4.4 years average prior secondary school teaching experience among its 39 instructional personnel with such prior experience.

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[1] ERIC Clearinghouse for Junior College Information, "The Preparation and Characteristics of Junior College Teachers," UCLA Junior College Research Review, Vol. 2, No. 6 (February, 1968).

Ninety-eight teachers have had prior elementary school teaching experience. This experience ranged from 1.5 years average at Cochise College to 4.4 years average at Glendale and Phoenix. The six-college average for prior elementary school teaching experience was 3.5 years.

An average of 5.2 years of college teaching experience was found for the six institutions. Phoenix College lead with an average of 8.0 years, while at the opposite extreme, Mesa Community College and Cochise College showed 3.8 and 3.7 years experience respectively.

The armed forces, graduate assistants, adult education, evening and part-time and business college are the categories that are included in the Columns entitled "other teaching experience." The faculty at Eastern Arizona College had the six-college minimum of 1.8 years other experience. Cochise College with a 5.7 years average had the six-college high with respect to those with other teaching experience.

EXTENT OF FACULTY TURNOVER

Turnover is a term used to refer to the vacating of an employment position by one person and the assuming of said position by another. It is a measure of continuity in office of personnel. Little turnover of a faculty is one indication of satisfaction with the work. Conversely where there is much turnover, a search should be made to determine the causes and if corrective actions are possible, they should be made.

Since junior colleges are the nation's fastest growing group of higher education institutions, questions concerning the extent of turnover of professional personnel naturally arise. The focus of concern is on the numbers and percentages of persons resigning and the reasons for their doing so.

In an attempt to ascertain the extent of turnover and the reasons for it among Arizona's junior colleges, personal contacts were made with or questionnaires were sent to the personnel offices or deans of instruction. Information obtained was used to compile the tables that follow. Data for the three academic years 1964-65, 1965-66, and 1966-67 were used so that a more comprehensive picture might be obtained than any one year alone would display.

Table 4.13 gives the number of resignations over the three-year period in each of the six colleges according to teaching area or field in which the resignations took place. There were 122 resignations in all, with the largest number, 35, being from Arizona Western College and the next largest number, 26, being from Phoenix College. Mesa had only 10 persons leave its instructional staff. As might be expected, the English departments were high in the number of resignations, since that teaching area generally employs a large proportion of the faculty.

The reasons for the above resignations, with the resultant need to find replacements, are of importance to administrators and board members. Table 4.14 tabulates the reasons given for the 122 persons who ceased employment with the six schools. The most frequently mentioned reason for leaving the junior college was to teach in a four-year college or university. Thirty teachers left junior college employment for this reason, with 11 of these being from Cochise College. The next most frequently listed reason was to teach in another junior college. Twenty-three gave this reason, with 12 of these being from Arizona Western. Health and personal reasons accounted for 19, as did graduate study also. Business and industry attracted 15, but high school teaching drew off only five. A variety of other reasons were given for 11 persons. Included among these latter were such reasons as: the family wished to return to some other part of the United States, to enter government service, and -- in one instance -- to go into elementary school administration. One is left to speculate on the degree of employment satisfaction involved for those who gave personal reasons as the reason for resigning.

Tables 4.15 and 4.16 indicate some percentages for the several institutions as related to the reasons for resignations. This makes comparability among the institutions a bit easier. Table 4.15, for example, shows that nearly 65 percent of Cochise College's resignations were due to the fact that the instructors were going to teach in four-year institutions, while less than 10 percent of those leaving Mesa Community College were doing so for this reason. For the six colleges as a whole 24.6 percent left to enter teaching in four-year colleges.

TABLE 4.12

TEACHING EXPERIENCE OF INSTRUCTIONAL PERSONNEL IN ARIZONA JUNIOR COLLEGES, FALL OF 1967

Name of College	Level of Teaching Experience									Average Total Teaching Experience
	Elementary		Secondary		College		Other			
	Number of Persons	Average Number of Years	Number of Persons	Average Number of years	Number of Persons	Average Number of Years	Type*	Number of Persons	Average Number of Years	
Arizona Western	8	3.7	39	4.4	58	5.3	1	3	2.0	8.1
							2	6	2.0	
							6	7	5.0	
Cochise	8	1.5	32	7.0	36	3.7	1	2	15.0	9.6
							2	3	2.3	
							4	1	12.0	
							5	1	1.5	
							6	2	1.2	
Eastern	7	3.9	35	7.0	48	5.9	1	1	1	10.7
							4	1	4	
							6	1	.5	
Glendale	22	4.4	86	7.1	101	4.4	1	3	2.7	10.6
							2	2	2.0	
							6	2	3.5	
Mesa	17	3.3	84	7.4	80	3.8	2	3	2.5	10.6
							3	1	2.0	
							4	2	4.0	
							5	1	2.0	
							6	4	2.5	
Phoenix	40	4.4	112	7.7	163	8.0	1	4	3.4	14.1
							2	5	2.2	
							3	2	4.0	
							6	23	3.3	

*1-Armed Forces; 2-Graduate Assistant; 3-Adult Education; 4-Evening and Part-Time; 5-Business College; 6-Miscellaneous, including tutoring, hospital, rural, foreign, extension, substituting, summer camp, part-time parent education. NOTE: School Administrative Experience not included in the table.

TABLE 4.13

NUMBER OF RESIGNATIONS BY AREA OR TEACHING FIELD IN ARIZONA JUNIOR COLLEGES FOR THE SCHOOL YEARS 1964-65 THROUGH 1966-1967 INCLUSIVE

	COLLEGE						
Area or Field	A.W.C.	Cochise	E.A.C.	Glendale	Mesa	Phoenix	Totals
Fine Art	4	2		1		1	8
Biology		1		3		1	5
Business	5	1	3		3	3	15
Science	3	1	2			1	7
English	4	4	2	8	4	7	29
For. Lang.	2				1		3
Math.				3		4	7
Nursing		1			1		2
Psychol.		1		1		2	4
Phy. Ed.	1	2		1	1	3	8
Soc. Sci.	2	2	2	1			7
Speech						2	2
Admin.	3	1	3				7
Counsel.	1		1				2
Library	1	1					2
Tech.	6						6
Others	3		3			2	8
TOTAL RESIGN.	35	17	16	18	10	26	122

TABLE 4.14

NUMBER OF RESIGNATIONS BY REASON FOR RESIGNING FROM ARIZONA JUNIOR COLLEGES FOR THE SCHOOL YEARS 1964-65 THROUGH 1966-67, INCLUSIVE

REASON	A.W.C.	Cochise	E.A.C.	Glendale	Mesa	Phoenix	Totals
Graduate Study	5	2	1	5	1	5	19
Another Jr. C.	12		3	2	1	5	23
High School		1	2			2	5
4-year College	4	11	4	4	1	6	30
Business or Industry	6		3	2	1	3	15
Health & Personal	2		1	5	6	5	19
Other Reasons	6	3	2				11
TOTAL RESIGNATIONS	35	17	16	18	10	26	122

TABLE 4.15

PERCENTAGE OF TOTAL COLLEGE RESIGNATIONS BY REASON FOR RESIGNING FROM ARIZONA JUNIOR COLLEGES FOR THE SCHOOL YEARS 1964-65 THROUGH 1966-67, INCLUSIVE

REASON	A.W.C.	Cochise	E.A.C.	Glendale	Mesa	Phoenix	Totals
Graduate Study	14.3	11.8	6.3	27.8	9.1	19.2	15.6
Another Jr. C.	34.3		18.8	11.1	9.1	19.2	18.8
High School		5.9	12.5			7.7	4.1
4-year College	11.4	64.7	25.0	22.2	9.1	23.1	24.6
Business or Industry	17.1		18.8	11.1	9.1	11.5	12.3
Health & Personal	5.7		6.3	27.8	60.0	19.2	15.6
Other Reasons	17.1	17.6	12.5				9.0
TOTAL RESIGNATIONS	99.9	100.0	100.0	100.0	100.0	99.9	100.0

TABLE 4.16

PERCENTAGE OF TOTAL STAFF IN EACH COLLEGE RESIGNING FOR VARIOUS REASONS FROM ARIZONA JUNIOR COLLEGES FOR THE SCHOOL YEARS 1964-1965 THROUGH 1966-1967, INCLUSIVE

REASON	A.W.C.	Cochise	E.A.C.	Maricopa District	All Colleges
Graduate Study	2.7	.9	.7	1.3	1.3
Another Jr. C.	6.5		2.1	1.0	1.7
High School		.4	1.4	.2	.4
4-year College	2.2	5.1	2.8	1.3	2.2
Business - Industry	3.3		2.1	.7	1.1
Health & Personal	1.1		.7	1.9	1.3
Other Reasons	3.3	1.4	1.4		.8
Percentage of TOTAL STAFF RESIGNING	19.1	7.8	11.2	6.4	8.8

The total percentages given at the bottom of Table 4.16 are meaningful. About 19 percent of Arizona Western College's professional staff resigned during the three-year period, while only 6.4 percent left the Maricopa Junior College District, 7.8 percent left Cochise College and 11.2 percent resigned from Eastern Arizona College. When the turnover exceeds these lower percentages very much, a more penetrating study of the reasons is warranted.

STUDENT PERSONNEL SPECIALISTS

The services provided by junior college student personnel specialists are many and varied in nature. From orientation to the campus until placement in an occupation or four-year college, the junior college student avails himself of student personnel services.

During the spring of 1968, personal interviews were conducted and questionnaire data were obtained from student personnel specialists in the state's junior colleges. Using that information as a basis the following six subsections were written to provide a description of Arizona Junior College student personnel specialists in terms of their work experience, academic preparation, problems, needs, and their suggestions for improvement of student personnel services.

FUNCTIONS OF STUDENT PERSONNEL SERVICES

The diversity in types of services and names for those services throughout student personnel programs across the United States prompted Raines[1] and his co-workers to establish a taxonomy of services. The scheme of services typically found under student personnel programs includes:

1. The Orientation Function
2. The Appraisal Function
3. The Consultative Function
4. The Regulative Function
5. The Participation Function

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[1] Max Raines and others, Junior College Student Personnel Programs: Appraisal and Development, American Association of Junior Colleges, 1965.

6. The Service Function

7. The Organizational Function

The underlying commitment of each of these functions is to the concern for total student development. An opportunity for each student to become aware of the programs and resources of the college is provided through the orientation function. High school visits as well as on-campus programs are included in the function. The appraisal function establishes a basis, through psychological, social and economic studies, for understanding the students to be served. The consultative function involves student talks with college officials about problems and areas of concern to the former. In the regulatory function, both social and academic regulations are developed and interpreted. Students are involved in student affairs and self-government as a part of the participation function. In the service function, financial assistance and placement of graduates is provided. The organizational function involves administrative organization, program articulation and in-service programs for the student personnel workers.[1]

The current status of Arizona junior college student personnel programs was assessed using Raines' Appendix D as a basis. It may be said that most of the student personnel workers interviewed saw their programs as being broad in scope as well as high in quality of service performed, with respect to the 35 functions of junior colleges listed by Raines in Appendix D. However, several student personnel specialists indicated a need for the health clinical function as well as the health appraisal function at their institution. A detailed analysis of the data procured may be presented at a later date.

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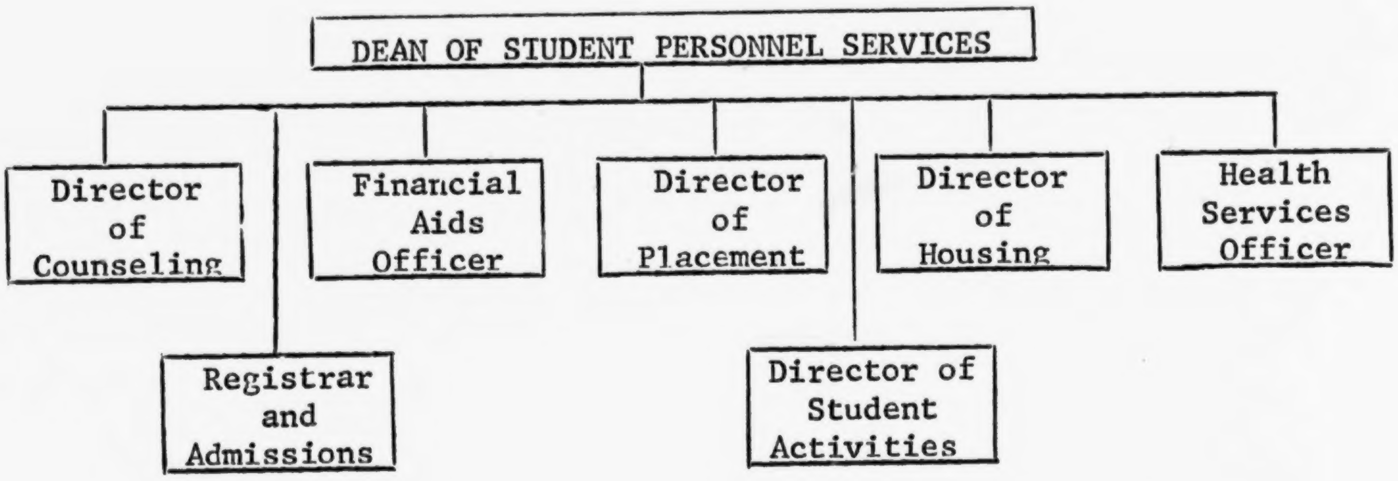
[1] _Ibid_.

ORGANIZATIONAL PATTERNS, TITLES, AND JOB DESCRIPTIONS

A considerable amount of variation existed in the organizational pattern of Arizona junior college student personnel programs. The following staff diagram is offered as a hypothetical model from which to discuss actual organizational patterns:


DEAN OF STUDENT PERSONNEL SERVICES
Director of Counseling
Financial Aids Officer
Director of Placement
Director of Housing
Health Services Officer
Registrar and Admissions
Director of Student Activities

In most cases the Dean of Student Personnel Services was the chief student personnel administrator and devoted part of his time to directing the athletic program at the college. At Phoenix College, however, the counseling department was organized under the Dean of Instruction and included the financial aids as well as placement of graduates. Though the Dean of Instruction may have exercised considerable influence on the student personnel area in Arizona junior colleges he was not typically the chief executive over the counseling department of student personnel work.

The counseling function was performed by a variety of officers. The Dean of Men, Dean of Women, Financial Aids Officer, Director of Admissions all contributed variable amounts of their time to that function. Nearly every institution had an individual who devoted a majority of his time to counseling and all colleges had persons who counseled as part of their load.

The Director of Placement served as Admissions Officer at Cochise College. The student personnel research function was performed by the placement director at most colleges and usually involved follow-up studies of graduates in transfer and vocational-technical programs. At Cochise College, however, the Registrar performed the student personnel research function. At Mesa Community College student personnel research was performed by a counselor in addition to her counseling.

The diversity of functions performed by the various officers made it difficult to identify individuals from institution to institution who performed comparable functions.

ACADEMIC PREPARATION

The academic preparation of the student personnel specialists interviewed during the data-collecting trip is presented below:

Highest Degree Held

Bachelors	Masters	Doctorate	Other
3	25	3	1 (RN)

These figures do not represent all the junior college student personnel specialists in the state; some persons were not available for interviews.

The basic orientation of those interviewed was found to be in the field of counseling. Twenty-one of the 32 interviewed had had a supervised practicum in counseling. About equal numbers had had that practicum or supervised counseling in the secondary school as opposed to the College setting.

The professional experience of those interviewed is presented in Table 4.17, which follows. From this table it is apparent that the greatest average experience, both in teaching and student personnel work, was at the elementary and secondary school levels.

COUNSELOR LOAD

In an effort to determine the actual amount of time spent counseling at each institution, the proportion of each counselor's time devoted to the counseling process[1] was summed for all counselors at each institution and entered in Column 3 of Table 4.18. In addition, the FTSE, or full-time student equivalents per counselor, are given in Column 4 for each college. The latter approximation is somewhat misleading, in that the FTSE may include a high proportion of part-time students who may require counseling time far in excess of a single full-time student.

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[1] Includes all types of counseling: financial aids, vocational, academic, and personal.

TABLE 4.17

PROFESSIONAL EXPERIENCE OF ARIZONA JUNIOR COLLEGE STUDENT PERSONNEL SPECIALISTS, SPRING 1968

		Teaching			Student Personnel Work			Administration		
Title	Years in Position	Elem & Sec.	Junior College	University	Elem. & Sec.	Junior College	University	Elem & Sec.	Junior College	University
Dean of Students	2	3	2	2		2				
	2	4			4	2				
	3	9	8			3				
	3	4			8	10				
Associate Dean of Students	3	5			3					
	2	12				2				
Director of Counseling	3	4	1			3				
	2	3		1	9	2				
Counselor	4		12			2				
	2		3			2		4		
	2	2		1	10	2				
	1	9		3	5	1				
	2					3				
	2	1			6	2	1			
	11				11					22
	3	3	6		3					

TABLE 4.17 (Continued)

		Teaching			Student Personnel Work			Administration		
Title	Years in Position	Elem. & Sec.	Junior College	University	Elem. & Sec.	Junior College	University	Elem. & Sec.	Junior College	University
Counselor	2			1	2	1				
	1					1				
	2	4				2				
	5	2			3	5				
	2	1			1	2				
Director of Guidance	4		5		4	3				
Counselor and Financial Aids	1	12	1			1				
Dean of Women	3					3				
Director of Admissions	6		7			6				
	2		1			2		2		
Registrar	1					1			3	
	4					4				
Director of Financial Aids	1	5			2	1				
Director of Placement	2	1			3	2	3			

TABLE 4.17 (Concluded)

Title	Years in Position	Teaching: Elem. & Sec.	Teaching: Junior College	Teaching: University	Student Personnel Work: Elem. & Sec.	Student Personnel Work: Junior College	Student Personnel Work: University	Administration: Elem. & Sec.	Administration: Junior College	Administration: University
Director of Student Union	1						2			
College Nurse					7	2				
TOTALS	86	84	26	13	81	46	6	6	3	22
AVERAGE YEARS EXPERIENCE	2.7	2.6	.8	.4	2.5	1.4	.2	.2	.1	.7

A close look at Table 4.18 indicates a trend toward higher student counselor ratios with increasing institution size. Of equal or more significance is the indication that there is not an adequate number of counselors for the student loads involved. On the other hand if in fact there are enough counselors, they are performing too many noncounseling functions and therefore do not have sufficient time for counseling.

TABLE 4.18

COUNSELING LOAD PER FULL-TIME COUNSELOR EQUIVALENTS AND PER COUNSELING OFFICE, OCTOBER 1, 1967

College	Oct. 1 FTSE	Full-Time Counselor Equivalents*	FTSE Per Counselor	FTSE Per Counseling Office
(1)	(2)	(3)	(4)	(5)
AWC	1,309	1.41	928	218
Cochise	929	2.80	331	310
EAC	1,010	1.75	577	337
Glendale	3,336	2.50**	1334**	667
Mesa	2,935	2.03	1446	734
Phoenix	6,096	4.20	1451	1,016

*Actual time devoted to counseling as reported by counselors themselves and other pupil personnel specialists.

**If the Director of Placement did any counseling the full-time counselor equivalents would be higher to the extent of the percentage of his time devoted to counseling and the FTSE per counselor would be somewhat reduced.

Column 5 of the table shows what the FTSE was per counseling office. It is one indication of where more office space for counseling may be needed.

COUNSELING FACILITIES

An enumeration of the counseling facilities in each of the colleges indicated the following facilities available:

Arizona Western College

6 counseling offices (used for counseling to varying degrees)

Cochise College

3 counseling offices, 1 placement office

Eastern Arizona College

3 counseling offices

Glendale Community College

5 counseling offices

Maricopa Technical College

4 counseling offices and one testing room planned

Mesa Community College

4 counseling offices (including financial aids and placement)

Phoenix College

6 counseling offices

Excluding Maricopa Technical College, it was calculated that on the average statewide the ratio of counseling offices to FTSE was 1:547. The high of 1,016 per office was evidenced at Phoenix College with the low of 218 per office at Arizona Western. The trend again, as with the counselor-student ratio, seemed to be toward increased student loads as the size of the institution increased. It must also be recognized that certain offices listed may not be used exclusively for counseling purposes.

PROBLEMS AND NEEDS

From the problems and needs expressed by student personnel workers interviewed at each institution and as a result of study of the student personnel services a number of rather common concerns became apparent. They are:

1. The need for quantification of the workload for student personnel specialists and better role definition of counselors and other student personnel workers. At the time of the study counselors were commonly being used in student personnel work positions in areas where less skill was required. They were overtrained for some jobs they were placed in. Written job descriptions in all instances would be of value. Included in these would be a specification of where counseling stops and referral takes place as well as clear indications as to whom the services may be extended.

2. The need for definition of institutional staffing standards for student personnel workers on a statewide basis. The variety of positions constituting a student personnel program, the number of personnel needed for institutions of various sizes, and the qualifications for the assignments need to receive attention in the junior college system.

3. An increased awareness by policy makers of the roles student personnel specialists play in implementing the basic philosophy of the junior college.

4. With significant recent growth in institutional size, the need to reemphasize the philosophy of personal adjustment. Also, there appeared to be need to change emphasis in personal counseling from crisis cases to more time for those students who need just a little attention.

5. The need for more counselors and more time for counselors to do counseling vis-a-vis other student personnel tasks. As indirectly intimated in Number "1" above, counselors should counsel. It should be kept in mind that part-time students may require as much counseling time as full-time students. Therefore the ratio of counselors to FTSE is misleading. There were a number of indications that counseling needs were not being met.

6. The need for personal counseling for evening division students.

7. The need for additional offices, conference rooms, filing space, and storage area for counseling and other student personnel purposes.

8. The need to locate counseling facilities away from administration facilities and near the flow of student traffic. Also, some sort of separation of counseling offices from offices of other student personnel workers may be beneficial where not the case.

9. The need for continuing in-service training programs for counselors and other student personnel specialists. More contacts with personnel managers in business and industry and field trips into business and industrial enterprises would appear to have merit. Not only in-district in-service training opportunities but also more statewide institutes and workshops would be beneficial. This is not to suggest that personnel were not capable. The thrust would be to make that which is good even better.

10. The need to evaluate student personnel programs, including the quality of counseling that instructors in academic areas give, in order to assess their efficiency. Procedures for self-evaluations would be included in this undertaking.

11. The need for continuing improvement of articulation with the universities. Unpublicized changes in educational programs at the universities lead to problems in educational advisement at the junior colleges.

12. The need for better financing of student personnel services. Student personnel services add to costs per FTSE and contribute to the achievement of institutional goals. Except for some financial assistance for vocational counseling, however, well developed student personnel programs receive no more help from the state per FTSE than do meager programs. Perhaps, some special financing for experimental or pilot programs in selected aspects of student personnel services would be of benefit to all institutions, particularly if a thorough evaluation of results was included.

In conclusion, Arizona's junior college student personnel programs appear to evidence the same needs that Raines[1] found in the 1964 national study.

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[1] Op. Cit.

CHAPTER V

CHAPTER V

THE EDUCATIONAL PROGRAM

We turn now to the educational program which is in reality the heart of the junior college operation. Let us first examine some general factors which should influence this program.

Many forces are in operation in the United States that have a profound effect on our society in general and on social and individual curriculum needs in specific. There is only one way for man to face these forces and that is by opening his eyes to them -- not by burying his head in the sand. It is necessary to understand these forces and explore all possible solutions that could result from them. Such a response involves the chance of making some mistakes but by not responding we are in the danger of permitting a society to develop that will not be able to cope at all with the world of the future.

Our first step is to look at the setting of the United States in order that we might better understand what part Arizona will play in the future.

The United States is made up of mountains, plains and water areas, with a variety of climates represented, making living and earning a living possible under a variety of conditions. Arizona shares in most of these.

The water supply of the United States, so necessary to population growth, some industry, and agriculture, in 1960 was measured at 1200 BGD (billion gallons per day) with 270 BGD being withdrawn. It is estimated the withdrawal will increase to 559 BGD in 1980 and 888 BGD by the year 2000. In the Southwest in 1980 the demand is estimated to be 89 BGD from a source of 45 BGD, surely a reason for concern in population growth, industrialization and farming. Although by 1980 the United States will have sufficient water to meet its estimated needs the agriculture areas of the Southwest with their increased population growth will need effective measures for water development if they are to survive. (Department of the Interior)

In 1960 the population of the United States was 179.3 million people, doubling between 1900 and 1950 and increasing at a rate of 1.75 percent each year since. This rate of growth has not been evenly distributed geographically, the greatest increase being in the middle Atlantic, Great Lakes, West Coast and Southwest areas. One of the greatest increases has been the Southwest, specifically the belt of states along the Mexican border. In the West, higher rates of increase are anticipated. Today's population stands at over 200 million with an estimated 247-266 million by 1985. (Bureau of the Census)

In Arizona, other than the increase in the steady growth of manufacturing and "services" with a decrease in agriculture, each sector of the economy, as in the United States as a whole, has maintained a relatively even growth. Since the depression the rate of growth of the American economy has risen at a relatively steady rate of about 4 percent annually.

For the United States, agriculture is no longer as important as it was, supplying only 5 percent of the national income, and less than 8 percent of employment. Over the past 50 years, acreage devoted to cropland has remained constant, yet with only half the farm population agriculture output has more than doubled. In relationship to the entire United States, Arizona's agriculture is measured primarily as a grazing economy.

Mining accounts for about 1 percent of the national income and employment. Its importance is not in dollars or people employed, but its contribution to fuel and raw materials for manufacturing. Domestic needs now exceed domestic output for most metals and importation has become necessary and will probably be increased. Copper reserves, important to the Arizona economy, are adequate at present, but unless new sources are developed, imports will be necessary to provide for the total need of the United States. The extensive coal deposits in northwestern Arizona probably will not prove to be of any great advantage to the State as the percentage use of coal as a fuel has been dropping for the past 40 years. The replacing has been done by petroleum and natural gas. Nuclear power is a relatively new technology that is increasing rapidly around the world and there is no reason to believe that this will not be true in Arizona.

Manufacturing at the present time is concentrated on both coasts and in the Great Lakes region. At this time there is no reason to indicate that this pattern will be broken.

Services tend to center in the areas of concentrated manufacturing and areas of urban concentration. If the prediction of Lloyds of London proves accurate that by the year 2000 Phoenix and Tucson will be one metropolis, then by definition the service occupations will increase considerably at least in this part of the state of Arizona.

Transportation contributes directly to growth through employment and income and even more directly, by supplementing other sectors of the economy. Transportation bridges the gap between raw materials, production and markets and carries a large number of people in the pursuit of business, education, and pleasure. All forms of transportation, such as railroads, waterways, pipelines, airlines and motor vehicles are important to the development of human settlements. A study of maps of these means of transportation shows that major highways cut across the state of Arizona going through Phoenix and Tucson both north and south and east and west. Areas not in one of these direct lines lack major highways. Major air routes on a good schedule basis tend to be concentrated east and west with practically nothing north and south. Navigable waterways are completely lacking, as are seaports. (Rand McNally and Co.)

In 1950, 34 percent of the population of the United States 25 years old or older had high school diplomas. By 1965, this increased to 45 percent. In 1960 the national average for schooling was 10.6 years with Arizona slightly above this. Today, approximately one-third of the men between 20-42 are either enrolled in college, have had some college education or hold a college diploma. It is predicted that by 1980, 58 percent of men 25 years and older will have completed high school as compared with 7.7 percent in 1960. (U.S. Bureau of the Census)

If these predictions are correct this means that high school graduates between 1960 and 1980 will increase 34 percent, thus making many more students eligible for a college education. Following through on this, it is predicted that the number of college graduates will increase 24.7 percent from 1960 to 1980. (Doxiadis).

New careers and the obsolescence of many of those now in existence make the prediction of appropriate educational programs, especially for persons in the technical and nonskilled areas, most difficult to plan for, when thinking 12 to 32 years in the future. This, of course, is a very reasonable time when one considers that a child in the primary grades will be in the job market in 12 years (1980) and those being born this year will be well into their careers 32 years from now (2000).

Technology has moved ahead more in the last 50 years than in the previous 5,000. How much will it move in the next 12 to 32 years? Engineers predict that half of what this year's graduating engineers know will be obsolete in ten years and half of what they will need to know is not known by anyone today.

The American Academy of Arts and Science lists these innovations expected prior to the year 2000:

1. Extremely lightweight high-strength structural materials
2. New superperformance fabrics such as paper, fibers and plastics
3. New airborne vehicles
4. Intensive expansion of tropical agriculture and forestry
5. Extensive worldwide use of high-altitude cameras for mapping and prospecting
6. Automated grocery and department stores
7. New methods of teaching languages rapidly

New jobs will develop in new fields. A field now in the early stages of development is that of atomic energy, particularly as applied to power plants. This field will require health physicists, probably medical doctors who will be assisted by radiation monitors needing some specialized training, but not that of a physician or physicist. (U.S. Atomic Energy Commission) Within 15 years computer technology has developed from nothing to extensive use by large and small corporations. In addition to top-flight scientists and mathematician system analysts, programmers and digital-computer operators are needed. (Data Process Management Association) Aerospace is the most glamorous of the fields requiring very extensively trained personnel, but in addition two-year college graduates are needed in chemistry, physics, ceramic engineering, medicine and administration. (National Aeronautic and Space Administration)

Teaching, an old field with a new look and approach, will require many new types of specialists and these specialists will need assistants such as teacher aides, secretaries, piano players, and assistants to maintain shops and laboratories. (U.S. Department of Health, Education and Welfare).

The health field is expanding in many directions and looking for technicians and nurses in areas even too numerous to mention. (Changing Times)

Old jobs threatened by these new ones include supervisors, law clerks, supermarket checkers, investment analysts, bookkeepers, check sorters in banks, office clerks, and various types of factory workers.

CURRICULAR OFFERINGS IN THE JUNIOR COLLEGES

In an effort to appraise the program presently in operation in the junior colleges of Arizona, the following table was constructed from the data sources currently available. Much of the pertinent information associated with the junior college program is readily discernible from it. We shall draw upon this information as we develop the first five sub-topics of Chapter V as listed in the table of contents.

UNIVERSITY PARALLEL COURSES

Table 5.1 indicates by college the curricular offerings that are generally transferable to four year colleges and universities. These are identified as "college transfer programs" and are marked on the table with an asterisk. In general, these curriculums parallel those offered at the four-year institutions and are generally accepted by them without loss of credit. The number of students by college and program is indicated in the body of the table and the percentage of total enrollment in college transfer programs is shown in the total columns on the right of the table. It will be noted that these percentages range from 23 percent at Arizona Western to 57 percent at Glendale. It would appear, however, that the rural and urban factors are not critical here since Eastern Arizona College shows 52 percent in transfer programs.

SEMI-PROFESSIONAL, TECHNICAL AND SKILL PROGRAMS

These programs are shown in the table as "Terminal/vocational" and are marked with a double asterisk. Again enrollments by programs and college are shown in

TABLE

PROGRAM AND ENROLLMENT ANALYS

RECENTLY APPROVED ARIZO

	ADMINISTRATION – BUSINESS*	ADMINISTRATION DAY CARE CENTERS **	ADMINISTRATION – OFFICE **	ADMINISTRATION – PUBLIC ***	AGRICULTURE – BUSINESS **	AGRICULTURE – GENERAL**	AGRICULTURE – PROFESSIONAL***	ART – COLLEGE & GENERAL***	AVIATION TECHNOLOGY **	BUSINESS – GENERAL ***	CITRUS FRUIT PRODUCTION **	CIVIL SURVEY TECHNOLOGY **	CRIMINOLOGY **	DATA PROCESSING **	DENTAL HYGIENE **	DRAFTING TECHNOLOGY **	DRAMA *	EDUCATION – ELEMENTARY *	EDUCATION – INDUSTRIAL **	EDUCATION – MUSIC *	EDUCATION – PRIMARY *	EDUCATION – SECONDARY *	ELECTRONIC TECHNOLOGY **	FASHION DESIGN ***	FIRE SCIENCE **	FISHERIES & WILD LIFE SCIENCE **	FOOD SERVICE ***	FORESTRY ***	GENERAL ***	HOME ECONOMICS ***	HUMANITIES ***	INDUSTRIAL ARTS **	INDUSTRIAL TECHNOLOGY **
ARIZONA WESTERN	136	17	42		5	17	27	29		48	9	9		63		30	2	69	6				35						1	23	38		
COCHISE	74			1		11		15	4	14		13	1		1	29	5	50				66				3		3	119		1		
EASTERN ARIZONA	51				4	7	38	16		4				31		30		83				172	16					20	40	7			1
GLENDALE	603	3		1		37		161		153				27		99	21	296		41	30	271	198	5			3		852	84			
MESA	570					61		97		101				2		160	21	318		38	1	281	55				2		983	98			
PHOENIX	1292	27		31				231		201		59		483		198	54	532		69	46	407	428	52	32		33		1624	138			
PIMA	X		X					X	X	X				X	X	X	X						X		X		X			X	X		X
PINAL	X	X	X		X	X	X	X		X		X		X		X	X	X		X	X	X	X			X			X		X		X
YAVAPAI	X				X	X	X	X		X				X		X	X	X		X	X		X					X			X	X	X

FOOTNOTES

[1] COLLEGE TRANSFER PROGRAMS, AS INDICATED BY EACH COLLEGE, ARE MARKED WITH *

[2] VOCATIONAL/TERMINAL PROGRAMS, AS INDICATED BY EACH COLLEGE, ARE MARKED WITH **, WHILE PROGRAMS CONTAINING BOT

[3] HUMANITIES INCLUDE THE FOLLOWING COURSES AS INDICATED BY CURRENT ENROLLMENTS: ANTHROPOLOGY, HISTORY, LATIN AM

[4] PUBLIC COMMUNICATIONS INCLUDE THE FOLLOWING COURSES AS INDICATED BY CURRENT ENROLLMENTS: ADVERTISING, JOUR

[5] SCIENCES INCLUDE THE FOLLOWING COURSES AS INDICATED BY CURRENT ENROLLMENTS: BIOLOGICAL SCIENCES, NATURAL SC

[6] CURRICULUMS PLANNED BY RECENTLY APPROVED JUNIOR COLLEGES ARE MARKED WITH AN X

LE 5.1

ALYSIS TABLE FOR EXISTING AND
RIZONA JUNIOR COLLEGES

HUMANITIES ***	38	1					X	X	X
INDUSTRIAL ARTS **									X
INDUSTRIAL TECHNOLOGY **			1				X	X	X
LANGUAGES ***	47	2					X	X	X
LAW ENFORCEMENT SCIENCE ***		60		52	73	286	X	X	
LIBERAL ARTS *		86	58	615	405	1358	X	X	X
LIBRARY TECHNOLOGY **									
MATHEMATICS ***	11	6					X	X	X
MECHANICAL ENGINEERING TECHNOLOGY **			6				X		X
MECHANICAL AGRICULTURE TECHNOLOGY **			4					X	
MECHANICS - AUTO **	40		52				X	X	X
MEDICAL RECORDS TECHNOLOGY **		11				53	X		
MEDICAL SECRETARY ** & RECEPTIONIST		18		5	13	49	X		X
MEDICAL TECHNOLOGY **	8			18	18	47	X		
MIDDLE MANAGEMENT **	31	49	24	1	2	60	X	X	X
MUSIC *	23	4		25		18	X	X	X
PHOTOGRAPHY ***				5		52	X	X	X
PHYSICAL EDUCATION *	76	27		133	135	233	X	X	X
PHYSICAL THERAPY **		1					X		
PRE - AGRICULTURE *								X	X
PRE - DENTAL *	11			52	37	53		X	X
PRE - ENGINEERING *	36	36	24	272		629		X	X
PRE - LAW *	24	8	19	81	69	128		X	X
PRE-MEDICINE *	9	6	59	57	42	89		X	X
PRE-OPTOMETRY *						6		X	
PRE-PHARMACY *		2		13	5	13		X	X
PSYCHOLOGY ***	22	7	16				X	X	X
PUBLIC COMMUNICATIONS **	8	5	3	3	19	79	X		
RADIOLOGY TECHNOLOGY **		1					X		
REAL ESTATE **				5	13	41			
REGISTERED & LPN NURSING *	32	29		84	43	143	X	X	X
SCIENCES *	18	4		100	51	132	X	X	X
SECRETARIAL & CLERICAL **	22	47	36	228	179	398	X	X	X
SPECIAL EDUCATION *		3							
SPEECH *	5	1		11	4	27	X	X	X
VETERINARIAN **		6						X	
WELDING TECHNOLOGY **	20						X	X	X
UNDECLARED/UNCLASSIFIED	835	535	77	105	84	561			
TOTAL NUMBER OF STUDENTS	1884	1364	898	4750	3980	10392			
TOTAL NUMBER OF CURRICULUMS	37	40	26	37	31	40	37	45	39
PERCENT OF TOTAL ENROLLMENT UNDECLARED AND UNCLASSIFIED	44	39	8	2	2	6			
PERCENT OF TOTAL ENROLLMENT TRANSFER PROGRAMS	24	29	52	57	51	50			
PERCENT OF TOTAL ENROLLMENT JOINT PROGRAMS	13	17	16	28	34	25			
PERCENT OF TOTAL ENROLLMENT TERMINAL-VOCATIONAL PROGRAMS	19	15	24	13	13	19			

ING BOTH TERMINAL AND TRANSFER STUDENTS ARE MARKED WITH ***
LATIN AMERICAN STUDIES, POLITICAL SCIENCE, SOCIOLOGY AND SOCIAL SCIENCE
IG, JOURNALISM AND RADIO BROADCASTING
URAL SCIENCE, AND PHYSICAL SCIENCES

the body of the table with percentage of total enrollment in such programs showing at the right of the table. For example, Glendale Junior College showed 13 percent of its students enrolled in terminal/vocational programs.

The range here is from 13 percent at both Mesa and Glendale to 24 percent at Eastern Arizona. Cochise College shows 15 percent while both Arizona Western and Phoenix show 19 percent in semi-professional, technical and skill programs.

JOINT PROGRAMS

Undoubtedly some programs contain both university bound and terminal people. Where this likelihood occurs the programs have been marked with a triple asterisk. Again, enrollments by program is shown in the body of the table and percent of total enrollment in joint programs is shown at the right. Mesa, with 34 percent of its students in joint programs, is high in this category and Arizona Western with 13 percent is low. It is to be noted, however, that Arizona Western College shows 44 percent of its enrollment undeclared and unclassified. Perhaps many students so tallied were actually in joint programs. Actually these two are convenience categories to accommodate a lack of specific information with regard to a considerable group of students and just what proportion of these students' fall into the transfer and terminal programs depends upon factors many of which develop during the students experience in the program.

Obviously the classifications of college transfer, terminal/vocational and joint programs are in a sense arbitrary and the colleges have cautioned against the accuracy of both the classifications and the enrollments. Nevertheless this breakdown gives a general picture which we believe can be helpful in planning and organizing programs for the future.

ENRICHMENT, VOCATIONAL AND CULTURAL OFFERINGS

The nature of the junior college operation makes it difficult to identify programs and courses under this heading. Often students pursue such courses through programs generally considered "college transfer" or "terminal and vocational." Also, some such students may appear in the table under the headings of "General" or "Undeclared and Unclassified." Others may have pursued courses in day or evening classes listed under humanities, liberal arts, music, art, language, science, etc. Another likelihood is that some such students were pursuing one or more courses in programs such as agriculture, photography, business, drama or many others where their needs can be best met. The important element here seems to be that the program is flexible and broad enough to accommodate these people.

ADULT EDUCATION INCLUDING REFRESHER COURSES, UPGRADING AND RE-TRAINING

Here again we find it difficult to pinpoint where these people are tabulated in the table. However, in a modern junior college, many of these persons are attending evening classes because they are employed during the day. Others begin their work under this heading but later move into a full-time program with broader objectives. Some of the junior colleges are providing special opportunity for re-training and refresher courses as evidenced by the urban center (Maricopa Technical College) being established in downtown Phoenix by the Maricopa County Junior College District. The program here will be centered around innovation and flexibility designed to meet updating and re-training needs. In this particular instance a deliberate effort is being made to prevent a fixed program with permanent staff. Instead, programs and staff will come and go as required by the situations and needs.

PROGRAMS PLANNED FOR THE RECENTLY APPROVED JUNIOR COLLEGE DISTRICTS

Table 5.1 also shows the programs proposed for initial offerings at the colleges in the three recently established junior college districts. These are indicated with the letter "X". Obviously, these programs are in the planning stage and have not been finalized. Some programs are being considered which are not on the chart. Among these are the following:

Central Arizona (Pinal County) - Cosmetology and Building Technology

Pima County - Diesel Technology, Hotel-Motel Management and Visual Communications.

UNIFORMITY AND DIVERSITY IN PROGRAMS AMONG THE JUNIOR COLLEGES

Examination of the above table indicates that all junior colleges in Arizona provide curriculums that will accommodate transfer to four-year institutions. Beyond this uniformity, however, there is evidence that the respective colleges are community centered, the offerings being based upon the needs of the service areas.

The geographic and climatic diversity of the state dictates some variation but highly specialized and expensive programs are not proliferated beyond total state needs. This condition likely results from timely cooperation between the state junior college board and the junior colleges.

ADAPTATIONS OF CURRICULUM PROGRAMS TO UNIQUE LOCAL SETTINGS

A study of the settings of junior colleges throughout the United States and those of our local colleges indicates that the settings in the state of Arizona will probably be no more or less divergent than those throughout the rest of the country. It is important to understand, however, that due to the topography, climate, industry and the various ways in which people earn their living, each junior college will have to have its curriculum tailored to meet the needs of the specific area in which it is located.

All of the existing and planned junior college districts have completed such studies or have them now underway. Others will need to conduct such studies with particular emphasis on the local curriculum needs before their colleges are planned. All three of these groups will need to review continually their existing curriculum and proposed plans in order that they may be in step with our changing society in general and the local changes in specific. Foremost among these will need to be the emphasis of re-training workers whose skills are no longer needed. It is extremely important to remember that although popular opinion of interested local citizens can be useful in determining appropriate curriculum, curriculum needs have to be determined upon the hard facts of reality.

FEASIBILITY FACTORS IN CURRICULUM AS RELATED TO FACILITIES, FINANCE, PERSONNEL

Virtually all of the recent predictions made on the growth of the various states in the Union and the general development during the 1970's indicate that Arizona along with Florida will be the pacesetters for the entire country. Since these reports are so much in agreement, there is every reason to believe that manpower to provide personnel for all types of professions and occupations will be available in this state. With Arizona being one of the fastest growing states in the Union by virtually any measuring instrument, it is very reasonable to assume that through cooperative ventures of local, state and federal government bodies and adequate tax support the necessary financing and development of facilities can be carried out as indicated elsewhere in this report. If we fail to meet this responsibility in Arizona it will not be because we can not afford to do so but rather that we are committing our resources in less important areas. Experiences in other states have indicated that money spent on community colleges has increased the employability of their young citizens to a degree that has had a significant positive effect upon the economy.

CURRICULUM COORDINATION AND ARTICULATION WITH OTHER HIGHER EDUCATION INSTITUTIONS

Although not desirable in itself, the paucity of private colleges in the state of Arizona makes it much easier to develop and maintain coordination between the state universities and the junior colleges. While it may not have been true a few years ago, there seems to be a general agreement now on the part of both university and junior college administration and staffs that these two types of institutions of higher education have a supportive rather than a competing function and that what is good for one is good for the other. Thus any problems that might arise can be solved through coordination and articulation to the benefit of both. The present climate indicates a high degree of interest of all parties concerned to do just this.

At the present time the universities are conducting undergraduate and graduate programs in the professions and in graduate liberal arts. These are areas unsuited to the junior colleges and for this reason areas in which they would not develop programs. The junior colleges are concentrating on programs in adult education, lower division college transfer courses, pre-professional programs, and terminal/vocational programs. This makes curriculum coordination a relatively easy matter. To date there has been little difficulty for students to transfer their junior college work to one of the state universities or any other institution of higher education.

In all probability there will be many opportunities for the universities and junior colleges to share both facilities and staff members. In addition students might want to register at two institutions in cases where each of these have some of the courses especially suited to a student's educational and/or vocational objectives. It is very probable that as the junior colleges grow, the universities might wish to expand their course offerings in these locations (at the present time a number of Continuing Education courses are taught on junior college campuses in the evening) by using the facilities of the junior colleges. In some cases the universities are having certain courses taught by members of the junior college staffs. This type of cooperation is commendable and should be extended.

There are on the horizon other problems of coordination and articulation that deserve attention at this time. One of these is concerned with duplication of programs in the vocational, trade and industry areas. While the two-year technical programs have generally been assigned to the junior colleges of the state, such delegation of emphasis is much less clear for programs in the vocational, trades and industries category. Some high schools are now rejuvenating their vocational programs with new facilities, equipment and general emphasis. Surely this effort is commendable if it is not allowed to over-flow into the adult education programs of the secondary school where it would seem that the junior college could more effectively meet the needs of this post-high school age group.

There is also another thrust from the university level which is moving in the direction of lower division terminal programs in the vocational, trade and industrial fields. Some of these are undoubtedly motivated as feeder programs supplying students for professionally related upper division programs. Temporarily such feeder programs may be justifiable but from the standpoint of a defensible and economical sequence it would appear that the secondary schools should place their vocational emphasis upon the high school age student; the junior colleges focus attention upon the first two years of post-high school education; and the universities concentrate on programs leading to the baccalaureate and graduate degrees. This arrangement could very possibly result in better use of instructional staff, facilities and equipment, avoid duplication of effort and thus serve better the needs of the state.

A second factor, which should be carefully scrutinized, is that of extension services from the universities to sections of the state that could more economically be served by the junior colleges. To the degree that junior colleges can provide these services the competitive elements should be eliminated. This is not to say that this is presently a serious problem in the state but is intended only as a caution against an expensive pattern which could easily develop.

This section of the report indicates a need for representatives from all levels of education and training to sit down together and coordinate their endeavors statewide.

EXTENSIONS AND REVISIONS OF CURRICULUM AS SUGGESTED BY MANPOWER NEEDS

A concentrated and continued effort on the part of all educational institutions of the state will be required if Arizona is to keep abreast of manpower needs. Undoubtedly the junior colleges have done a commendable job of adjusting to changing needs and conditions. The very nature of their operation, geared as it is to community needs, insures that they will continue to wield leadership in meeting manpower needs.

"Manpower Directions '75" published by the Arizona State Employment Service, under date of September, 1967, makes some pertinent observations some of which are excerpted below:

1. Projections based upon establishment trends indicate that by 1975 Arizona will have a population of 2,300,000 citizens and a labor force of at least 777,000 people. Similar to the present labor force, it will consist predominantly of young people. The major change will be that although women constituted 26 percent of the labor force in 1950 and about 33 percent in 1965, it is predicted

that in 1975 they will make up 40 percent. This means more jobs for young people especially women.

2. The study shows that nearly 250,000 new job opportunities will be available in the state between 1965-1975.

3. A breakdown of these new job opportunities shows:

   78,000 -- professional, technical and managerial
   45,000 -- clerical
   33,500 -- skilled
   32,000 -- semiskilled
   5,000 -- unskilled

4. In the past 15 years, Arizona industrial composition has undergone considerable change. The emphasis has shifted to the development of a more diversified economy. Manufacturing employment represented only 7.5 percent of the jobs in 1950, 12.9 percent in 1965, but is expected to increase to 16.7 percent in 1975. During this same period of time, agriculture dropped from 20.5 percent in 1950 to 7.2 percent in 1965 and will probably drop to 4.4 percent in 1975.

5. The wholesale-retail and governmental categories are expected to rank at the top in 1975. Technological advances in all occupations will increase the number of jobs of the technical, managerial, and clerical fields. Service occupations will increase due to tourism and travel activities.

6. Specific job openings which are predicted for rapid expansion in Arizona through 1975 include nurses, secretaries, sheet metal workers, social workers, stenographers, metal workers, teachers, tool and die makers, waiters and waitresses, welders, and writers and editors.

7. Approximately 60,000 of the new positions will require four or more years of college training.

8. Approximately 190,000 of the new employees will enter jobs requiring high school vocational training, trade school or community college preparation.

9. Many of these new positions will entail apprenticeship or on-the-job training as well as formal education.

10. Training programs must be designed to aid all those previously overlooked by economic progress and employment opportunity must be extended to all.

11. Particular attention must be given to members of minority groups who are currently employed below their potential achievement level because of discrimination and lack of opportunity.

The following conclusions and recommendations quoted verbatim from "Manpower Directions '75" seem to be appropriate at this point. The role of the junior college in the achievement of indicated objectives is readily discernible from this quotation.

> This study of Arizona's manpower needs to 1975 shows that the potential of a serious manpower problem exists. The problem could become more grave as time progresses, but is by no means insurmountable. However, certain actions must be taken and directions explored, if Arizona's manpower resources are to be developed to satisfy future demand.
>
> Arizona will have the number of people required to meet 1975 employment demands of 750,000. Indeed, if proper steps are taken, the unemployment rate could be much lower than the 3.5 percent upon which projections are based. In this case, employment could be expanded beyond that expected. The problem is one of labor force quality, skill level, not of numbers.
>
> The future is bright and the fabulous success of the past could appear pale by comparison. The dedicated effort of everyone in solving the manpower problems can pay gigantic dividends. Solution of the manpower problem actually has two dimensions: one direction to be taken is in the area of immediate and short-run manpower needs; the second is to solve long-range human resource development problems. Both long-range and short-run problems must be solved if the full potential of the future is to be achieved. Experience, coupled with the findings of this study, suggest the following approaches.
>
> Short-Run
>
> Many of the shortages indicated are of immedidate concern because of the lengthy training period required to prepare for most occupations. This is particularly true of professional and technical occupations and of many skilled positions. The following program of action is indicated to forestall the more immediate occupational shortages.
>
> A. Organize at the state and local levels a program to be sponsored and carried out by representatives of business and industry to promote and encourage:
>
>   1. Utilization of present employees at their highest skill level including providing lesser skilled technical assistants to support professional, managerial, and highly technical staff.
>
>   2. Development of in-plant training programs to upgrade existing employees into higher level and shortage

occupations, thus freeing jobs at the lower and entry levels for lesser job applicants.

3. Restructure and redesign jobs in hard-to-fill occupational categories into two or more lesser skilled jobs in order to make better utilization of the existing labor supply.

4. Reevaluate hiring specifications and nonperformance hiring requirements such as age, sex, race, education, and unrealistic physical ability limitations to bring them more in line with what is actually required to perform in specific occupations.

5. Improve and expand in-plant training by establishing a program whereby employers would commit one out of every four or five future job openings as a trainee position for an existing lesser skilled employee or a new unskilled employee.

B. Expand and open new student cooperative training programs (half-time work and half-time school) in high demand, shortage, and emerging occupations at all educational levels - high school, adult education, junior colleges, and some university level programs - through:

   1. Establishment of vocational education action programs by industry and trade associations working with local educational institutions.

   2. Development of special adult education programs in plants and stores, utilizing facilities and supervisory employees during off-shifts and week-ends.

Long-Range

Occupational shortages delineated by this study indicate a continuing need for long-run planning. It has been demonstrated that occupational trends dictate longer periods of training for a larger portion of the work force. To plan for longer range manpower needs and to prevent future problems, community cooperation is required. A joint industry-educator-Employment Service program is needed which would encompass the following phases:

A. Develop and open communication channels between industry and the educational system at all levels to provide schools, junior colleges, and universities with an early warning system of industry needs.

B. Emphasize, encourage, support, and participate in vocational awareness and planning by:

1. Beginning to educate students, and their parents, at the seventh and eighth grade levels about the world of work, occupations, and occupational requirements. Emphasizing the stature and dignity of "blue collar" jobs as well as "white collar" jobs and continuing this program through high school.

2. Developing, cooperating, and providing for joint sponsorship and conduct of annual Job Fairs such as part of the annual State Fair or as a state-wide traveling show by industry, educators, and the Employment Service.

3. Encouraging and supporting local schools to provide for high school counselors who function exclusively as Vocational Guidance Counselors to assist youth and adults in vocational planning and preparation. Furthermore, industry should provide members of their staffs to assist in and supplement vocational guidance programs.

C. Expand and improve school and community training facilities by:

1. Setting up advisory groups to learn what schools are doing, learn how industry can aid the school programs, assist in selling and promoting expansion of business and terminal/vocational training facilities, and to establish special facilities for technical training outside the public school system where required.

2. Providing skilled and technical persons as training instructors to supplement school instructors in new, demand, shortage, or changing occupations.

D. Develop a loan and/or scholarship fund to assist and encourage persons to prepare to teach in demand and shortage occupations.

E. Develop a loan and/or scholarship fund to enable students to take training in demand or shortage occupations.

F. Encourage, support, and participate in occupational research to be carried out by school districts, universities, the Employment Service, and other component research organizations to develop information on future occupational requirements as part of the vocational education planning process to identify improved methods of training and to experiment with new teaching and training methods and techniques in the field of business and terminal/vocational training.

G. Encourage and facilitate research in manpower utilization and encourage young men and women to enter careers in Business Administration and more specifically in Personnel Administration and Manpower Planning, industry should arrange and provide for student scholarships and loans and endow colleges of Business Administration for curricula and research in these fields.

Each recommendation made, if acted upon, can help Arizona achieve future economic goals. There may be other steps which would work; it is not suggested that avenues to success are limited. The important thing is that all responsible members of the community contribute their share.

Arizona must take another giant step forward. It must begin now. Let us get on with it.

Another important factor in the manpower problem of the state centers around the role played in the junior college program by the State Department of Vocational Education. This role is rather carefully examined in the paragraphs ahead.

The present practice of incorporating the vocational and technical program in the junior college program of the state seems to be sound. All levels of the establishment seem to be relatively satisfied with the basic premise and while there are related problems at no point did we detect any desire to establish separate area vocational schools.

The State Department of Vocational Education indicates a very positive attitude toward the present operation in the junior colleges. The State Director and the Area Supervisors are pleased with the trend at the junior college level of making the person in charge of V-T education a dean directly responsible to the junior college president. They also report good progress on the junior college campuses in providing permanent housing and facilities for V-T education.

The State Department indicates excellent cooperation toward special technical programs concentrated at particular college campuses. Procedures for transfer in the V-T program have been worked out and the difference between the per capita cost of instruction and the tuition are being met by the Vocational Education Office. It should be pointed out here that this is a dependable source of revenue for the junior colleges since the Vocational Education Act is of the permanent type of legislation.

Two distinct trends seem to be discernible in the present V-T programs. One: there is a significant move toward the extension of skill programs as terminal curriculums, and two: the less technical facilities and equipment of the V-T programs are being made available to skill programs thus avoiding duplication and expense.

A list of miscellaneous trends and observations in the V-T area are summarized below:

1. The high schools are not keeping apace of manpower needs in the V-T fields.

2. Manpower programs in the junior colleges in the V-T fields must and are being extended, in part because of the high schools defaulting.

3. The holding power of the V-T program at the post-high school level is greater than that at the high school level.

4. Advanced placement of high school students in junior college V-T programs is becoming more prevalent.

5. Business and industry are willing to and actually are cooperating with junior colleges to meet the V-T manpower needs. This is reflected in both facilities and instructional personnel.

6. The profile of the work force indicates a need of approximately 25 percent in degree requiring employment and 75 percent in nondegree V-T employment, yet our training programs have been almost the reverse of these figures.

7. The Phoenix urban center project (Maricopa Technical College) in Maricopa County could establish a precedent for a new type of junior college.

8. The junior colleges through the V-T programs may enhance the enculturation of the Indian population.

9. Further cooperation between the V-T program and the craft and trade unions seems to be in the offing.

Manpower needs indicate that the junior colleges should consider extensions in or into the following areas:

Cosmetology
Law Enforcement (sociological aspect)
Industrial plastics
Electronics assembly
Clerks, waitresses and cleaning personnel

Industrial design
Office occupations (other than secretarial and business)
Legal and medical secretaries
Fashion merchandizing
Agricultural marketing
Industrial arts (beyond or parallel to high school)
Power and transportation
Building construction
Drafting and design (further extensions needed)
Nursing home personnel (other than nursing)
Food service personnel
Child day-care center workers
Preparation for homemaking (beyond high school)

In this section of the survey we are concerned with the curriculum recommendations that are implicit from the manpower study and with means of implementing the necessary curriculum changes and innovations. The following observations and suggestions are based on the information obtained from the various manpower studies and are submitted as possibilities that might be helpful in planning for the future.

1. The junior colleges should continue to diversify the curriculum offerings in terms of both present and future needs and without concern for custom or precedent.

2. The junior colleges should anticipate plant, staff and equipment needs well in advance of impending manpower shortages.

3. The junior colleges should work for built-in flexibility in program in order to adjust to abrupt social changes or technological breakthrough.

4. Junior colleges should actively encourage adequate financing of projected needs in order to protect the state from losses due to manpower shortages.

5. Junior colleges should assist in conserving human resources by reaching out to all segments of the population giving special attention to minority groups and the disadvantaged.

6. The junior colleges should attempt to remove all barriers to entry into any curriculum. Once a student has reached post-high school age, a desire for and commitment to further education should be the only prerequisite to admission.

7. The junior college should continue to work with industry, government and other interested agencies in training, updating, and retraining manpower.

8. Junior college programs and courses must be provided for men and women of all ages on a full- and part-time basis, offered during both the day and evening. These programs should include terminal/vocational, college transfer, retraining, and on-the-job upgrading.

9. Programs and courses need to be developed with the concept of continual change in mind; that is, programs and courses introduced with the full realization that these may soon be obsolete, within a few years, but that they are necessary to meet current needs. At the same time programs and courses will have to be introduced for job vacancies that do not exist today in order that when they do, students will have an adequate background enabling them to move into those occupations.

10. Colleges will have to continually study the job markets and educational scene in order to make the appropriate adjustments. At the same time the colleges will need to maintain an adequate guidance program to bring the students up-to-date regarding the current and future educational and job situation so that in turn they can make intelligent choices as to their own goals.

In the light of the past and present performance it is not likely that the junior colleges of Arizona will abdicate their responsibility in meeting the manpower needs of the state. To the degree that they move forward uninhibited and with vision and imagination, to this degree will they play their rightful role in providing the manpower essential for the decades ahead.

HOLDING POWER OF THE JUNIOR COLLEGE

The power of an educational institution to attract and hold students is the practical test of its effectiveness. Holding power is largely dependent upon the degree to which a curriculum can meet the needs of its students. The tremendous diversification of needs of the junior college population poses a real challenge to any junior college program. The fact that junior colleges have been able to survive and increase in popularity as they have done is in itself evidence that they have unusual holding power. However, the maximizing of this holding power is a constant challenge to those who plan and carry out the junior college program.

It is relatively easy to determine the number of dropouts from the conventional four-year college or university since a high percentage enroll in these institutions with the intention of completing a degree. The picture is not quite so clear in junior colleges since the offerings here are deliberately planned to meet a wide diversity of needs and objectives, many of which have discontinuance short of a full two-year program as part of the need and objective. It appears then that any comparison of dropout rates between junior colleges and four-year colleges and universities or any other educational institution should be based on student intent. Such studies are difficult for several reasons among which are such factors as changing objectives and discrepancies in stated and real objectives. No comprehensive studies in this area have, to date, been completed for the junior colleges of Arizona, nor has this survey attempted such an investigation.

Fortunately, however, there are available three recent studies as indicated below:

1. A study of students who discontinued their attendance at Arizona Western College during or immediately after the fall semester, 1965 -- James Mitchell, Director of Guidance, AWC - 1966.
2. Semiprofessional and technical curriculums - A one year follow-up study of the entering freshman class of 1965-1966 -- Dr. Irwin L. Spector - 1966.
3. College transfer curriculums - A one year follow-up study of the entering freshman class of 1965-1966 -- Dr. Irwin L. Spector - 1966.

The last two of these studies covered the Maricopa County Junior College District and when these freshmen are taken in conjunction with the entire student body at AWC which was involved in the first listed study we have considered the dropouts in a sampling of approximately 4,000 students which was about 20 percent of the total state junior college enrollment as of October 1, 1965. The findings of these studies thus become rather significant to the overall junior college establishment and are reported here as indicative of what a larger study might reveal.

The most important aspects of these studies center around the primary reasons given by students for their discontinuance. Table 5.2 summarizes this information from the three studies previously made.

TABLE 5.2

PRIMARY REASONS FOR WITHDRAWAL FROM JUNIOR COLLEGE

	Number of Freshman Students		
Reason	Maricopa County	Arizona Western	Total
Financial	52	17	69
Military	94	8	102
Completed Objective	28	6	34
Health	37	3	40
Personal	93	Not asked	93
Academic	15	15	30
To Accept Employment	28	3	31
Other (Married, Moved, etc.)	65	15	80
Transferred to Another School	Not asked	23	23
Totals	412	90	502

The categories in the studies summarized above did not completely parallel each other; however, sufficient uniformity did exist to allow pooling of the results through minor interpretations. The exceptions are indicated in the "not asked" spaces.

Assuming that the reasons given are the real reasons for discontinuance the data contained in the above table seem to support, with a reasonable degree of validity, the following observations:

1. Only 30 of the 502, or approximately 5.9 percent of the cases, are attributed to causes for which the college bears major responsibility. These are in the academic category.

2. Some categories such as "completed objective," "to accept employment," and "transferred to another school" may be desirable reasons for discontinuance.

3. Reasons listed under "personal" may involve some which could be alleviated by the college. The details are not available here.

4. Some reasons such as "financial" and "health" involve areas for which the college has some marginal responsibilities.

Outside the assumption that the reasons given are the real reasons for discontinuance, certainly other possibilities arise which may add to the responsibility of the college, e.g., a student in academic distress may claim financial difficulties as a reason since it is more socially acceptable.

Secondary reasons for withdrawal as indicated by the Arizona Western College Survey indicate additional areas for which the college does have some responsibilities. The areas and frequencies or response are shown below:

a.	insufficient interest in my studies	30
b.	my grades are too low	21
c.	dissatisfied with some of my teachers	13
d.	no one to talk over my problems with	8
e.	social activities were too limited	11
f.	had no clear educational goals	20
g.	desired courses were not available	7
h.	poor study habits	3
i.	lacked basic academic skills	6

Recent withdrawal reports from Eastern Arizona College show the number of students withdrawing during the two semesters of 1966-67 and the first semester of 1967-68. Shown also are the reasons for withdrawal with their respective subtotals. These data are given in Table 5.3. This tabulation shows within semester withdrawals only and thus does not show those students who failed to return at the end of the semesters. The data here presented seem in no way to contradict the conclusions drawn from the discontinuance studies analyzed earlier in this section.

Many of these secondary and primary reasons could likely be alleviated through improved curriculums and staffs and increased guidance and counseling

TABLE 5.3

EASTERN ARIZONA COLLEGE WITHDRAWAL
REPORT FOR THREE SEMESTERS

Reason for Official Withdrawal	1st Sem. 1966-67	2nd Sem. 1966-67	1st Sem. 1967-68	Total
Unable to Achieve	3	6	7	16
Financial Problems	10	2	3	15
Lack of Interest in School	7	1	5	13
Full-Time Employment	3	3	3	9
Family Responsibilities or Problems	2	2	4	8
Joining Service	5	1	2	8
Personal Problems	4	2	2	8
Illness or Accident	6	0	1	7
Suspension from College	1	3	3	7
Leaving Area (Moving)	3	0	3	6
Drafted	1	0	4	5
Marriage	2	1	0	3
Church Mission	0	1	1	2
Unknown	3	2	10	15
Totals	50	24	48	122

services. Perhaps what are needed are more extensive entrance interviews and follow-up in addition to exit interviews.

The discontinuance problem in Arizona junior colleges is not unlike the national picture. Medsker reports as follows:

> From reports on dropout studies completed by 20 two-year colleges between 1949 and 1957, it was possible to categorize the reasons students gave for withdrawal. The table on the following page indicates that full-time employment headed the list of reasons and was followed by others which are characteristic of students of college age.
>
> The reasons for withdrawal given by students suggest that many students are subject to influences which compete with their college program. Jane Matson, in comparing a group of students who withdrew from junior college with a group who did not withdraw but had similar characteristics, observed that there was no significant difference between dropout and continuing students. Her conclusion was that the student who withdraws from junior college may lack a sense of belonging or identification with the college environment.

Reasons Stated for Withdrawing from Junior College
Reported by Approximately Ten Thousand Students
Enrolled in 20 Two-Year Colleges
Between 1949 and 1957

Reasons Stated for Withdrawal	No. of Students	Percent
Full-time employment	2,734	28
Personal and health	1,554	16
Moved or transferred	1,084	11
Nonattendance	1,013	10
Academic or faculty action	860	9
To enter armed forces	832	8
Not interested in school or dissatisfied	763	8
Financial	549	6
Marriage	264	3
Educational goals completed	55	1
Total	9,898	100

The college staffs and administrators might do well to weigh carefully the loss of time and money and the disappointment suffered through abortive junior college experiences. This loss involves not only the student but the teachers and administrative and clerical personnel.

Undoubtedly, improvement can be made in alleviating the discontinuance problem in the junior colleges of the state; however, the data indicate that the problem is less acute than one might expect and that the colleges are presently doing a good job at retaining their students sufficiently long to realize their objectives.

STUDENT CHARACTERISTICS AND THE EDUCATIONAL PROGRAM

Here again a study of the national and local scene indicates that junior college students in this state in general will exhibit the same characteristics of students in junior colleges throughout the rest of the country. As indicated by Leland L. Medsker in his book, The Junior College, they are:

1. The average academic attitude level of students entering two-year colleges is somewhat below that of those who enter four-year colleges.

2. Public junior colleges being primarily local and inexpensive to attend, draw heavily from the lower half of the social-economic population.

3. Slightly more than half of the students are in the 16 to 22 category, which is the typical college-age range. One-fifth are in what is known as the older youth group, 23 to 25, and one-sixth 30 years or older.

4. Although most junior colleges accept any student 18 years of age or older whether they are high school graduates or not, nearly all, around 94 percent, were high school graduates.

5. The ratio of married students in junior college ran from 11 percent in the rural areas to 31 percent in the metropolitan areas, with an average of 22 percent being married.

6. The ratio of men to women students at the present time is three to one, possibly due to the technical nature of many of the programs.

Studies conducted by the junior colleges and other agencies in the state of Arizona point out many similar characteristics along with a few that are different from the national picture. (Arizona Junior College Reports)

1. Approximately three-fourths of the students now attending junior college in Arizona are seeking educational and vocational goals that require four or more years of college preparation. Considering that about one-third of these students do less than average work it is unlikely that this large number should or would be able to go on to senior college.

2. In general, these students attend the junior college because it is close to their home and low in cost.

3. Depending on the college attended, one-fourth to three-fourths of the students report that they intend to work at least on a part-time basis while attending college.

4. A major portion of students view higher education as a means of securing vocational or professional training and economic security.

5. From one-third to one-half of the students drop out of college during their first year.

6. These students, on the whole, tend to score lower on achievement tests than do their peers going to one of the universities here in the state or to an institution of higher education elsewhere.

7. Although the job openings are predominately in the teminal/vocational areas, and in spite of the fact that many of the students are not successful in the purely academic programs, most of the students still choose lower division college courses in preparation to going on to senior colleges. In spite of the two previously mentioned conditions of jobs and ability plus the fact that many of them, in addition, will not be able to finance the last two years of college at a university, very few have been successfully guided into other areas of endeavor.

The generalizations on the following pages are based upon the data made available by studies conducted on Maricopa County junior colleges.

Since the junior colleges in Maricopa constitute approximately 85 percent of the total junior college enrollment of the state, the generalizations made from these data are significant. It is recognized, however, that these urban colleges are not completely characteristic of those located in rural areas. Also the degree of similarity between urban and rural colleges will vary from generalization to generalization. All of these factors must be taken into consideration in making projections or extrapolations outside Maricopa County.

The generalizations made here should have special implications for the Pima County Junior College now in process of establishment since the situation in Pima County is not unlike that in Maricopa County.

THE CHARACTERISTICS OF THE JUNIOR COLLEGE STUDENT IN MARICOPA COUNTY

A. Freshman American College Test scores.

a. Junior college student scores are significantly lower than the national norms for all students entering higher education. They are particularly low in English and mathematics.

b. Female students tend to score higher on the English subtest than do male students. The converse is true with regard to mathematics.

c. An analysis of high school grades indicates that about one-third of the students had less than a "C" grade in the four achievement areas used by the American College Test.

d. In sum, the achievement of Arizona junior college students is comparable with the national norms for junior colleges.

B. Career aspirations.

a. Approximately three-fourths of all entering freshmen aspire to four or more years of college.

b. Most junior college students view higher education as a means of personal advancement in the community.

c. About 30 percent of junior college students have educational aspirations that are inconsistent with their record of past achievement.

C. Personal.

a. The estimated gross family income for junior college students was under $7,500 (1966-67) per year.

b. A significant number of students are attracted to the junior college because of its low cost.

c. Slightly over half of all junior college students plan to work on at lease a half-time basis while attending college.

d. About 75 percent of all students expect to drive cars on campus.

D. Evening division.

a. As would be expected, evening division students are older than day students.

b. Three-fourths of the evening division graduates are men.

c. The majority of evening division students complete most of their studies in evening school.

d. The evening division does provide opportunities for students who withdraw from day programs.

E. Curricula.

a. Approximately half of the freshmen registered in semiprofessional and technical curricula complete at least one academic year. The retention power of these curricula, therefore, is equivalent to that of transfer programs.

b. Registered Nursing and Drafting have the highest retention rate after one year.

E, Student's view of his junior college experience.

a. Most students are satisfied with the quality of instruction that they receive at the junior college. They feel that the quality of instruction is good, and they feel that they have been well prepared for transfer.

b. Junior college students rate student activities next to faculty in terms of quality.

c. Students consider the physical facilities to be no better than average. (Most students in the sample were from Phoenix College. This school does have many temporary buildings. See Chapter III.)

d. Students rated the curriculum as only average, and they consider the administration and counseling services to be less than average.

LOCALES FROM WHICH ARIZONA JUNIOR COLLEGE STUDENTS COME

Another consideration related to Arizona junior college student characteristics is the locales from which the students come. This matter was discussed somewhat in Chapter II in the section that indicated how distance from campus affects enrollment. The attention now is focused on areas, particularly governmental jurisdictions, from which the students come rather than on distance factors. What percentages of the students come from within the county, other counties of the state, other states and other nations?

To answer this question an analysis was made of certain statistics in the annual reports of the state board for the school years 1964-65 through 1966-67, inclusive. The three-year period was used to help smooth out the influence of any unusual deviation for any one year. The findings were as follows:

For the State as a whole

91.5 percent of the students came from the county in which the junior college is located

6.0 percent came from other counties in the state

2.1 percent came from other states

.4 percent came from other nations

For Maricopa County Junior District*

97.4 percent were residents of the county

1.6 percent came from other counties in Arizona

.8 percent came from other states

.1 percent came from other nations

For Cochise County Junior College District

75.8 percent were residents of the county

12.9 percent came from other counties in Arizona

8.7 percent came from other states

2.6 percent came from other nations

For Graham County Junior College District

31.5 percent were residents of the county

59.4 percent came from other counties in Arizona

6.9 percent came from other states

2.2 percent came from other nations

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*Because percentages are rounded off, they do not always equal 100 percent when summed.

For Yuma County Junior College District

73.7 percent were residents of the county

16.9 percent came from other counties in Arizona

8.4 percent came from other states

1.0 percent came from other nations

For Cochise, Graham, and Yuma County Districts combined

64.1 percent were residents of these counties

26.0 percent came from other counties in Arizona

8.1 percent came from other states

1.8 percent came from other nations

The above percentages clearly show that the vast majority of the students were residents of the county in which they attended junior college. This was not so, however, in the case of the Graham County District (EAC). This district has been getting only slightly under one-third of its students from residents of the county. At the same time, EAJC has been getting nearly six-tenths of its students from other counties in the state of Arizona. It seems evident, therefore, that this institution could experience a temporary drop in enrollment below the present level when junior colleges open in Pima, Pinal and Yavapai Counties. Of course, Cochise and Yuma county junior college districts will also need to anticipate less students coming from other counties in the state, but, as the percentages above show, the effect will not be as great. In fact, growth in enrollments from other sources should easily offset losses of students who are residents of other Arizona counties.

It should also be noted that the junior colleges in Arizona have been getting rather small percentages of their students from other states (only 2.1 percent on a three-year average for the state as a whole) and only a few students from other nations. Twenty-seven of the 82 foreign students enrolled in Arizona junior colleges on October 1, 1967, were attending institutions in the Maricopa County District. It is generally recognized that there are certain educational benefits to a student body to have in its make-up a number of enrollees from other states and countries.

WHERE DID THE STUDENTS GO? HOW SUCCESSFUL WERE THEY?

The following generalizations can be made about students who transfer from Maricopa junior colleges to a university.

A. Students who transfer from junior college to the university experience a drop in grade point average of about half a point.

B. Students who attend junior college for two years before transferring tend to achieve at higher levels than those who transfer to the university with less than two years of junior college. However, the same generalization can be made about university students at large. They have both developed the ability to cope with higher education.

C. Those students who enroll in the college of education when they transfer to the university achieve at slightly higher levels than those who enroll in other colleges.

D. Results indicate that there is no prejudice against junior college students who transfer to the university. In cases where credit is not accepted for transfer, there seem to be three valid reasons:

a. Students attempt to transfer more junior college credits than the maximum allowed by the university.

b. The university does not accept credit that is earned in developmental courses. (A developmental course is one concerned with improving study skills.)

c. Credit for courses is not allowed where the grade was less than a "C".

E. On the average, students experience a loss of three credits in transferring.

Studies are needed of the success of students who go directly into various occupations. The State Department of Vocational Education and the junior colleges are undertaking such studies. The findings should be very meaningful for those who plan educational programs for the junior colleges.

CHAPTER VI

CHAPTER VI

SELECTED ASPECTS OF THE FINANCING OF ARIZONA JUNIOR COLLEGES

Another important facet of the Arizona junior college situation is the financing of the institutuons. As has been said of the public elementary and secondary schools, so also it is not too far amiss to say of the junior colleges; namely, "All the problems of the schools lead us back sooner or later to one basic problem - financing."[1] In this chapter a number of aspects of the financing of Arizona junior colleges are considered.

ASSESSED VALUATIONS

Since a significant portion of the funds for the financing of the junior colleges comes from state sources, it is worthwhile to examine the recent trends in net assessed valuations for the state as a whole. Some statistical data pertaining to this matter are presented in Table 6.1. From the 1967 supplement of Arizona Property Tax Rates and Assessed Valuations, a publication of the Arizona Tax Research Association, the net assessed valuations, listed in Column 2 of the table, were obtained. An examination of the figures shows that between 1958 and 1967, the net assessed valuation of property in the State of Arizona went up from $1,311,972,257 to $2,351,583,270. This was a tremendous increase of $1,039,611,013 or 79.2 percent. During the nine-year period the net assessed valuation for the state as a whole went up an average of $115,512,335 per year. The average increase percentagewise per year over the base year (1958) was 8.8 percent. As may be seen from Column 3 of the table, the largest increase was between 1958 and 1959 and amounted to over $144 million while the smallest increase above the previous year was in 1965. Even then, however, the net assessed valuation went up $55,709,248.

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[1] Rockefeller Brothers Fund, The Pursuit of Excellence: Education and the future of America, Panel Report V of the Special Studies Project, New York, Doubleday and Company, Inc., 1958, p. 33.

TABLE 6.1

ARIZONA NET ASSESSED VALUATIONS
1958-1967, INCLUSIVE

Year	Assessed Valuations*	Increase Above Previous Year	Percentage of Increase Above Previous Year
(1)	(2)	(3)	(4)
1958	$ 1,311,972,257	---	---
1959	1,456,025,696	$ 144,053,439	11.0
1960	1,599,816,242	143,790,546	9.9
1961	1,743,331,643	143,515,401	9.0
1962	1,862,616,291	119,284,648	6.8
1963	1,959,687,550	97,071,259	5.2
1964	2,073,510,461	113,822,911	5.8
1965	2,129,219,709	55,709,248	2.7
1966	2,238,806,714	109,587,005	5.1
1967	2,351,583,270	112,776,556	5.0

*Source of figures for Column 2: The Arizona Tax Research Association

Column 4 shows the percentage of increase above the previous year. This ranges from 2.7 percent in 1965 to 11.0 percent in 1959. On the average the percentage of increase from one year to the next was 6.7 percent. (The averaging of percentages is a questionable practice but in this instance a general indication may be derived therefrom.) The median percentage of change was 5.8 percent. The trend toward decreases in year to year percentage of increase is in part due to the fact that a larger assessed valuation was used each year as the basis for calculating said percentage of increase.

With the advent of new appraisal and assessment practices in 1968, one is left to speculate as to whether or not the increase in dollar amounts of net assessed valuation for the state from year to year will be significantly different from the trends indicated in Table 6.1. If appraisal and assessment practices had remained unchanged, one could predict with a certain amount of confidence the net assessed valuations for the years immediately ahead on the basis of the past trends.

Since the legislature has, in fact, established new bases for the determination of assessed valuations, one must wait until a relationship between past and future assessment practices is established before accurate future predictions can be made. Newspaper reports for early March of 1968 indicated that statewide the assessed valuation may go up as much as 16.2 percent. Preliminary figures show projected increases from somewhat over $2.3 billion to in excess of $2.7 billion. When one compares the preliminary figures for assessed valuations under the new valuation program with those for 1967 on a county by county basis, he finds the following percentages of change in assessed valuation:

Apache	+58.7	Mohave	+30.7
Cochise	+11.5	Navajo	+31.0
Coconino	+35.9	Pima	+14.7
Gila	-10.6	Pinal	-0.6
Graham	+49.0	Santa Cruz	+57.0
Greenlee	-9.5	Yavapai	+24.1
Maricopa	+15.6	Yuma	+42.5

From the above figures it may be seen that there will be considerable variation in the percentage of change in 1968 assessed valuation from that of 1967. Apache, Santa Cruz, and Graham Counties, for example, illustrate tremendous percentage increases for 1968 over the preceding year, while on the other hand, Gila, Greenlee, and Pinal Counties show decreases. It is interesting to note that Pinal County is the only county that has a junior college district that shows a decrease in assessed valuation for the next year. Though the above figures are only preliminary, it should be kept in mind that the State Department of Valuations has stated that only minor changes may be anticipated.

It was with the above information in mind that Table 6.2 was prepared and Figure 6-1 was drawn. *The table and the figure*, then, *must not be interpreted as predictions of future assessed valuations*. They must be thought of merely as indications of what said valuations might have been had there been no change in the law.

The main thing to note, in any case, is that Arizona can anticipate a continuing healthy growth in wealth in the near future, as reflected by the net assessed valuation of its property. This is a matter of importance to junior college finance.

TABLE 6.2

NET ASSESSED VALUATION: STATE OF ARIZONA
(trend indications rather than projections)

Year	X	Y		(Linear Trend) Y_e	log Y	log Y_c		(Exponential Trend) Y_c
1963	-3	1,950,688,000		1,959,678,400	9.29026	9.29254		1,961,000,000
1964	-1	2,073,470,000		2,052,226,800	9.31660	9.31176		2,050,000,000
1965	1	2,129,260,000		2,144,775,200	9.32818	9.33098		2,143,000,000
1966	3	2,240,586,000		2,237,323,600	9.35044	9.35020		2,241,000,000
1967			PROJECTIONS	2,329,872,200		9.36942	PROJECTIONS	2,341,000,000
1968				2,422,420,400		9.38864		2,447,000,000
1969				2,514,968,800		9.40786		2,558,000,000
1970				2,607,517,200		9.42708		2,673,500,000
1971				2,700,065,600		9.44630		2,794,500,000
1972				2,792,614,000		9.46552		2,921,000,000
1973				2,885,162,400		9.48474		3,053,000,000
1974				2,977,710,800		9.50396		3,191,000,000
1975				3,070,259,200		9.52318		3,336,000,000
1976				3,162,807,600		9.54240		3,487,000,000
1977				3,255,356,000		9.56162		3,644,000,000
1978				3,347,904,400		9.58084		3,809,000,000
1979				3,440,452,280		9.60006		3,982,000,000
1980				3,533,001,200		9.61928		4,162,000,000

$a = Y/N = 8{,}394{,}004{,}000/4 = 2{,}098{,}501{,}000$

$b = \Sigma XY/\Sigma X^2 = 925{,}484{,}000/20 = 46{,}274{,}200\ X$, where X = 1/2 year and center is at 64-65

$N = 4$

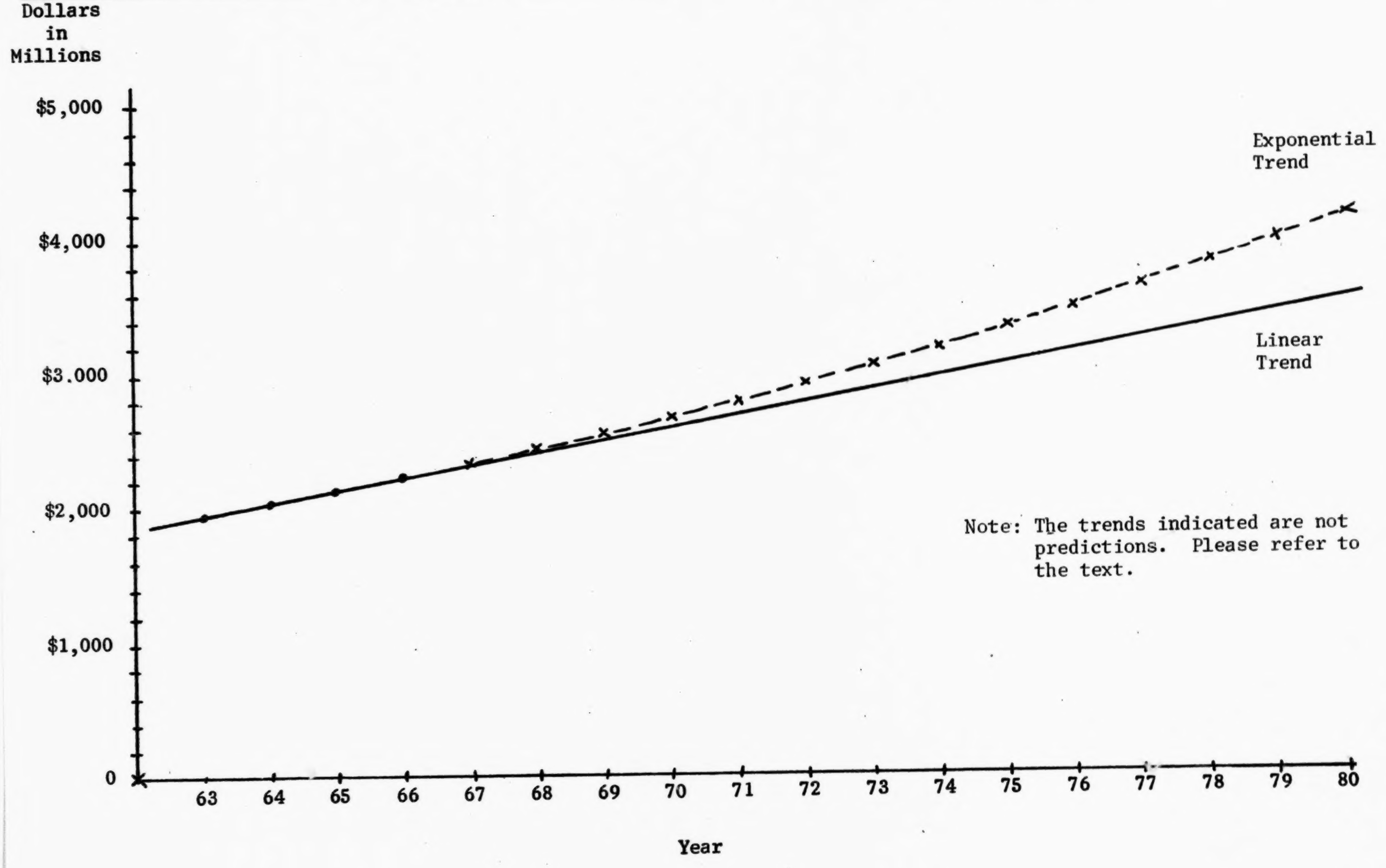
$\Sigma X^2 = 20$

2.205 x 2 = 4.410% annual increase linear curve fitting

The above projected figures represent trends only as determined by 1967 and prior assessment practices. To bring these figures in harmony with reality, it would be necessary to ascertain the relationship between former assessment practices and those that will develop following recent changes in the Arizona statutes. This relationship could not be determined at the time of this writing.

FIGURE 6-1

STATE OF ARIZONA: NET ASSESSED VALUATION TRENDS (1963-1980)



Note: The trends indicated are not predictions. Please refer to the text.

The foregoing data do not give a picture of what has been happening in recent years to net assessed valuations in the several counties of the state. For this reason Table 6.3 was prepared. This table indicates, among other things, the amount of net assessed valuation for each county in 1958 and in 1967 as reported by the Arizona Tax Research Association.

The ranking of the counties in net assessed valuation in 1958 from the greatest amount to the least was as follows: (1) Maricopa, (2) Pima, (3) Pinal, (4) Greenlee, (5) Cochise, (6) Yuma, (7) Yavapai, (8) Coconino, (9) Gila, (10) Mohave, (11) Navajo, (12) Apache, (13) Graham, and (14) Santa Cruz. In 1967, as Table 6.4 indicates, ten counties held the same above rank order but Coconino moved to seventh place while Yavapai became eighth and Mohave moved up to ninth place while Gila became tenth.

A ranking of the counties in net assessed valuation was also made on the basis of the preliminary figures released in March, 1968. If these figures are accurate enough, the 1968 rankings of the counties will be as follows: (1) Maricopa, (2) Pima, (3) Pinal, (4) Yuma, (5) Coconino, (6) Cochise, (7) Yavapai, (8) Mohave, (9) Greenlee, (10) Navajo, (11) Gila, (12) Apache, (13) Graham, (14) Santa Cruz. This ranking shows a number of significant changes from the rankings given in the paragraph above. Some of the counties hold their same relative position, however.

As is known by those who are familiar with Section 15-666 of the Arizona Revised Statutes, one of the requirements for the establishment of a junior college district is that the proposed district have an assessed valuation of $60,000,000 - based on the valuation for the preceding year. With this in mind it is particularly significant to note that 9 of the 14 counties already exceed the minimum figure and that Gila and Navajo Counties by 1967 had nearly reached that amount. Since Graham County already has a junior college, it thus is an evident fact that only Apache and Santa Cruz Counties do not now meet or approach the assessed valuation eligibility requirement for the establishment of a junior college district. Statewide reassessment does not change this picture.

The assessed valuation of a junior college district is only a partial indicator of the ability of the district to bear its share of the costs of financing education for its students. Perhaps a more meaningful figure is the amount of assessed

TABLE 6.3

INCREASES IN NET ASSESSED VALUATION OF ARIZONA COUNTIES BETWEEN 1958 AND 1967

County	Net Assessed Valuation* 1958	Net Assessed Valuation* 1967	Amount of Increase	Average Annual Increase	Percentage of Increase	Average Annual Percentage of Increase
Apache	$ 16,668,191	$ 26,284,546	$ 9,616,355	$ 1,068,484	57.7	6.4
Cochise	66,050,665	87,133,818	21,083,153	2,342,573	31.9	3.5
Coconino	45,198,193	78,226,053	33,027,860	2,669,651	73.1	8.1
Gila	35,991,690	59,681,420	23,689,730	2,632,192	65.8	7.3
Graham	12,476,058	16,579,339	4,103,281	455,920	32.9	3.6
Greenlee	77,068,907	96,205,349	19,136,442	2,126,271	24.8	2.8
Maricopa	538,674,654	1,074,313,660	535,639,006	59,515,445	99.4	11.0
Mohave	26,269,439	70,338,829	44,069,390	4,896,599	167.8	7.5
Navajo	20,610,015	57,640,277	37,030,262	4,114,473	179.7	8.9
Pima	242,713,350	466,045,266	223,311,916	24,812,435	92.0	10.2
Pinal	118,677,925	150,620,564	31,942,639	3,549,182	26.9	3.0
Santa Cruz	8,537,106	12,197,355	3,660,249	406,694	42.9	4.8
Yavapai	47,581,424	74,432,615	26,851,191	2,761,243	56.4	6.3
Yuma	55,454,639	81,884,179	26,429,540	2,936,611	47.7	5.3
State	1,311,972,257	2,351,583,270	1,039,611,013	115,512,335	79.4	8.8

*As reported by the Arizona Tax Research Association

TABLE 6.4

NET ASSESSED VALUATION OF THE COUNTIES IN ARIZONA, 1967

County	Valuation	Percent of State Total
Maricopa	$ 1,074,313,660	45.7
Pima	446,045,226	19.8
Pinal	150,620,564	6.4
Greenlee	96,205,349	4.1
Cochise	87,133,818	3.7
Yuma	81,884,179	3.5
Coconino	78,226,053	3.3
Yavapai	74,432,615	3.2
Mohave	70,338,829	3.0
Gila	59,681,420	2.5
Navajo	57,640,277	2.5
Apache	26,284,546	1.1
Graham	16,579,339	.7
Santa Cruz	12,197,355	.5
Total	$2,351,583,270	100.0

valuation backing up each full-time student equivalent (FTSE). This is said because a district could have a very high assessed valuation compared to other districts but at the same time it could have so many students attending college that it might have less assessed valuation behind each student than would be the case for another district with a lower assessed valuation but with relatively few students in attendance.

Some calculations were made for the years 1964 through 1967, inclusive, of the assessed valuations per FTSE for the four counties that have operating junior colleges. The FTSE for October 1st of each year, as reported to the State Board of Directors for Junior Colleges, was used for each district. The findings are given in Table 6.5.

The figures in Table 6.5 indicate a general trend; namely, assessed valuation per full-time student equivalent has tended to go downward. Stated another way, it would appear that junior college enrollments have been increasing more rapidly

TABLE 6.5

ASSESSED VALUATION PER FULL-TIME STUDENT EQUIVALENT IN ARIZONA JUNIOR COLLEGE DISTRICTS 1964-1967, INCLUSIVE

Year	County District			
	Cochise	Graham	Maricopa	Yuma
1964	$ 139,696	$ 22,844	$ 135,745	$ 77,200
1965	100,319	18,118	104,943	66,063
1966	107,229	17,162	93,496	58,973
1967	93,793	16,415	86,869	62,554

than have assessed valuations. The tendency has been consistent in Graham and Maricopa Counties. In Cochise County only 1966 varied from the general trend. Yuma County, however, showed some increase in assessed valuation per FTSE for 1967 over 1966.

The figures also dramatically indicate that Graham County consistently has had the least amount of assessed valuation behind each FTSE. In fact it only had about one-fourth as much assessed valuation behind each student as did the next lowest county, Yuma. It may be noted that Maricopa County was next to the top and Cochise rated at the top in assessed valuation per FTSE for the fall of 1967.

Inasmuch as Graham County will be getting an increase in assessed valuation of nearly 50 percent under the statewide reappraisal program, the amount of assessed valuation behind each full-time student equivalent in that county will go up dramatically next year. It may be anticipated, however, that Graham County Junior College District will continue to be the poorest district in terms of its assessed valuation behind each student. For the coming school year, Yuma County should see a rather decided increase in assessed valuation behind each student as a result of the reappraisal program while Cochise County may experience a slight increase. It is difficult to predict what the assessed valuation behind each student in Maricopa County will be next year because of the opening of Maricopa Technical College. The county, it would seem, is going to experience an increase in assessed valuation of between 15 and 16 percent, but the junior college district may very well increase its FTSE by a like percentage. For the state as a whole it seems reasonable to predict that in the years ahead the amount of assessed valuation behind each full-time student equivalent will decrease. This statement is based on the assumption that the enrollment of students in the junior colleges will increase at a more rapid rate than will the assessed valuation of the State of Arizona.

Of interest and concern is the matter of how much assessed valuation there will be behind each full-time student equivalent in Pima, Pinal, and Yavapai Counties when the junior colleges open there. Estimates were made by taking the preliminary figures for the new assessed valuations for 1968 for each of these counties and then adding a dollar amount of increase per year thereafter that was typical of what the trends have been in recent years, exclusive of 1968. By this means it was found that if the Pima County Junior College District opens its first institution with an enrollment of 2800 students in full-time equivalency, there should be about $205,000 of assessed valuation behind each student. If Pinal County Junior College District opens with a thousand pupils it should have about $153,000 behind each FTSE. Yavapai County's junior college, on the other hand, should open with about the same assessed valuation per FTSE that Cochise County now has, that is, about $95,000 in assessed valuation backing up each student. This latter statement is made on the assumption that the junior college in Yavapai County would open with a FTSE of 1000. Thus it can be seen that the three new junior college districts should open in a very favorable position as far as assessed valuation per full-time student equivalent is concerned.

Such new districts as have a potential for rapid increases in student enrollments should anticipate, however, that the assessed valuation behind each student will follow the trends that have been noted for the other junior college districts in the state, that is, a general trend for the assessed valuation per student to go down. Pima County Junior College District, for example, should study the trend in Maricopa County to get an indication of what the trend may well be in Pima County.

RETAIL SALES

The economic health or well-being of an area - be it a city, a county, or a nation - is a factor that helps to determine the capability of the citizens of the area to support public education programs. Important indicators of economic health are the dollar value of retail sales and the trends in the volume of said sales. Consequently, the survey team decided to make an analysis of retail sales in the various counties of the State of Arizona and for the state as a whole in order to help assess the capabilities of the various sections of the state to support junior college programs. For each of the 14 counties in Arizona, the retail sales, year by year, from 1958 through 1965 were obtained. The actual sales over the above-mentioned period of years then served as a basis for mathematical calculations leading to the establishment of linear projections of retail sales for the period up to and including the year 1980. The computations for each county are not given in this report, but they have been assembled and turned over to the Executive Secretary of the State Board of Directors for Junior Colleges for filing and for future reference if needed. A summary of the findings, however, has been included in Table 6.6. Only selected years have been included in the table; specifically for actual sales, 1958, 1963, and 1965 have been listed, while projected sales are given for the years 1970, 1975, and 1980.

A study of the table and of the basic data from which it was compiled revealed a number of interesting and significant facts, among which are the following:

1. Every county in the state increased retail sales in 1963 over those of 1958.

2. All counties except Apache and Pinal had higher retail sales in 1965 than in 1963. (Though not shown on the table, Apache and Pinal Counties both moved upward beyond 1963 sales in 1966 and again in 1967.)

3. Greenlee County, except for the one year - 1965 - has had the least amount of retail sales among the 14 counties. (Though not shown on the table, this was also true for 1966 and 1967.)

4. The ranking of the counties in terms of percentages of growth in retail sales from 1958 to 1965, inclusive, was as follows:

Maricopa - 66.4 percent, Navajo - 51.5 percent, Yuma - 45.8 percent, Pima - 45.6 percent, Coconino - 44.1 percent, Cochise - 37.5 percent, Santa Cruz - 36.9 percent, Greenlee - 32.9 percent, Mohave - 29.7 percent, Gila - 28.2 percent, Yavapai - 26.5 percent, Graham - 20.9 percent, Apache - 19.4 percent, Pinal - 13.0 percent.

TABLE 6.6

RETAIL SALES* BY COUNTIES: ACTUAL SALES AND LINEAR PROJECTIONS SELECTED YEARS 1958-1980

	Actual			Projected#		
County	1958	1963	1965	1970	1975	1980
Apache	$ 10,373	$ 13,279	$ 12,385	$ 15,305	$ 17,144	$ 18,984
Cochise	55,407	67,830	76,164	88,324	101,977	115,631
Coconino	52,559	71,720	75,744	95,259	112,752	130,246
Gila	27,864	34,025	35,710	42,319	48,656	54,993
Graham	16,324	19,572	19,739	23,358	26,300	29,242
Greenlee	9,720	11,639	12,921	15,294	17,649	20,004
Maricopa	875,064	1,286,566	1,425,902	1,830,982	2,216,815	2,602,648
Mohave	12,586	21,874	28,905	39,705	49,263	61,211
Navajo	28,012	41,118	42,373	55,228	66,125	77,022
Pima	303,225	427,953	441,443	511,870	582,946	654,021
Pinal	61,773	73,039	69,804	85,241	96,026	106,811
Santa Cruz	20,954	23,849	28,687	32,141	37,218	42,295
Yavapai	32,886	40,383	41,606	49,413	55,672	61,931
Yuma	66,976	86,690	97,634	120,086	143,806	167,525
Totals	1,573,723	2,219,537	2,409,017	3,004,525	3,572,349	4,142,564

*In thousands of dollars

#1967 actual sales, which became available after this table was completed, showed a drop for Greenlee County and decided increases for Mohave, Pima and Santa Cruz Counties.

5. Statewide, the percentage of increase in retail sales from 1958 to 1965, inclusive, was 53.3 percent or an average of 7.6 percent per year.

6. In 1965, Maricopa County had retail sales of $1,425,902,000 or 59.2 percent of the total retail sales in the state, while Pima County had such sales that year of $441,443,000, or 18.3 percent of the total retail sales in Arizona.

7. The retail sales for the state as a whole in 1965 totaled $2,409,017,000 while the projection for the total retail sales for 1980 is $4,142,564,000. This is an overall increase of about 72 percent or nearly five percent per year.

8. If the linear projections are accurate, by 1980 Maricopa County very likely will have about 63 percent of the retail sales in the state while at that time Pima County will have approximately 16 percent.

9. Mohave County, which was not affected by the copper strike, has already exceeded the projection for retail sales for 1970. On the table the projection for that year is $39,705,000, but according to Arizona Progress for February, 1968, the 1967 retail sales were $41,852,000 - a tremendous one-year percentage of change of 28.5 percent over the 1966 figure. (Arizona Progress calls attention to the fact that Mohave County is experiencing "burgeoning expansion in recreation, tourism, and manufacturing activities.")

10. Of the seven counties that have not organized junior college districts, only Apache and Greenlee had retail sales in 1965 below those of Graham County, a county that has a junior college district. (It is to be noted that the projections for retail sales for Graham County continue to place the county in third place from the bottom in dollar volume of retail sales by 1980.)

11. Among the seven counties that have organized junior college districts, Yavapai ranked second from the bottom in retail sales in 1965 with $41,606,000 worth of such sales. If the projections for 1980 are correct, all of the counties in the state, with the exception of the three mentioned in Item 10 above, will have retail sales by that date in excess of the retail sales by Yavapai County for 1965.

12. Upwards to a dozen years will pass, if the projections are correct, before Apache and Greenlee Counties approach the dollar volume in retail sales achieved by Graham County in 1965. This comparison is made because Graham County is the county with the junior college district having the least amount of retail sales among the seven counties that have junior college districts.

TAX RATES

Another aspect of the financing of Arizona junior colleges is the amount of property taxes per $100 of assessed valuation paid by the citizens of the various junior college districts. Some data on this subject are assembled in Table 6.7. Only for Graham County was it possible to go back as far as the year 1958 in the matter of junior college tax rates. Although Maricopa County had a junior college at that time in the county, said college was a part of the Phoenix Union High School District. Therefore, the tax rates for junior college purposes were a part of the overall tax rates for the school district. The other counties did not levy taxes for junior college purposes until the years first noted on the table.

TABLE 6.7

TAX RATES PER $100 OF ASSESSED VALUATION
ARIZONA JUNIOR COLLEGE DISTRICTS
1958-1967, INCLUSIVE

Year	County District						
	Cochise	Graham	Maricopa	Pima	Pinal	Yavapai	Yuma
1958		$ 1.2681					
1959		1.2675					
1960		1.5100					
1961		1.1935					
1962	$ .0666	1.1917			$ .0085		$ .4927
1963	.4680	1.2000	$ .2600		.0245		.6212
1964	.6632	1.2300	.2600		.0000		.7872
1965	.6598	1.2300	.2600		.0000		.7298
1966	.6856	.9700	.3100		.0000		.8320
1967	.7929	.9700	.3700	$ .0520	.2186	$ .4030	.8270

The tax rates for Cochise College for 1962 and 1963 should be considered atypical since the college did not open to students until the fall of 1964. The same may be said about the 1962 tax rate for Yuma County, since Arizona Western College did not open for students until the fall of 1963. Of course, Pima, Pinal, and Yavapai Counties had not, as of the time of this writing, arrived at the point where college facilities were available to admit students. The lack of junior college tax levies in Pinal County for the years 1964, 1965, and 1966 vividly indicates the fact that during that period of time very little progress was made in the county toward the establishment of a junior college facility.

Three of the four operating county junior college districts show increases in tax rates for the years indicated in Table 6.7. When one relates this to the previously mentioned trend toward decreases in assessed valuation per full-time student equivalency, the increase becomes somewhat understandable. Also, one must relate the increases to the fact that inflation is eroding away the purchasing power of the dollar.

There is a far more significant factor, however, that must be looked at when making comparisons of the increases in tax rates; that is, the question of what has been happening to the student population during the same period of time. To find out what comparison could be made here, the change in tax rates from 1964 to 1967 on a percentage basis was compared with the percentage of change in enrollments between 1964 and 1967. The following was determined: (1) the tax rate for Cochise County Junior College District went up 19.5 percent between 1964 and 1967, but the student full-time equivalency went up 62.8 percent, (2) the tax rate for Graham County district went down 19.2 percent while the full-time student equivalency went up for the same years (1954-1967) 54.4 percent, (3) in Maricopa County the tax rate increased 42.3 percent but the student full-time equivalency went up 73.3 percent, and (4) for the Yuma County junior college district there was a five percent increase in tax rate over the same period of years while the full-time student equivalency went up 37.3 percent. Thus, it can be readily seen that tax rates in Arizona's junior college districts have not been going up as rapidly as have the student enrollments.

It is interesting to note that for the three non-metropolitan junior college districts (Cochise, Graham and Yuma) there is a perfect negative correlation between the tax rate and the amount of assessed valuation behind each full-time student equivalent. Thus it is that Graham County with the lowest amount of assessed valuation behind each student has the highest tax rate; Yuma County with the medium amount of assessed valuation behind each student has the medium amount of tax rate; and Cochise County with the most assessed valuation among the three mentioned has the lowest tax rate.

With the change in policy on assessed valuation in the State of Arizona, comparisons of tax rates for 1968 and subsequent years with those of 1967 and prior years may not be particularly meaningful. Perhaps the amount spent per FTSE from local tax sources would be a more meaningful comparison.

SOURCES OF INCOME

Students of the financing of higher education are interested in the sources of income for post-secondary schools. Of particular interest to them is the percentages of income that come from various sources. To obtain a general idea of what percentage of the income for Arizona's junior colleges comes from a number of income categories, Tables 6.8, 6.9, and 6.10 were assembled. The percentages in the tables were computed as averages for the three academic years 1964-65 through 1966-67, inclusive, in order to smooth out the effects of an unusually large or small receipt of funds in any given category for any one year.

Table 6.8 makes clear that income for operations was, as might be expected, the overwhelming type of income for all districts, the percentages ranging from a low of 71 percent of all income for Cochise County to a high of 82.9 percent of all income for Maricopa County. Thus, income for capital funds made up from 17 to 28.8 percent of the money received during the three years.

State financial aid was the most important source of operational income in all four districts, while the district tax was the second most important source of operational funds in all districts except Graham, where tuition ranked second and district tax third. Small percentages of operational funds came from other sources as the table shows.

During the three years, the most significant source of capital funds for Cochise County was the district tax (10.9 percent of total income). For each of the other three districts the highest percentage of capital funds money came from state aid. Cash balances from previous years as a rule were an important source of capital funds.

Table 6.9 is different from Table 6.8 only in that it makes available the percentages for each income category as a percentage of the total operational income or of the total capital income. For example, by referring to Table 6.9

TABLE 6.8

AVERAGE PERCENTAGE OF TOTAL INCOME FROM VARIOUS INCOME CATEGORIES FOR ARIZONA JUNIOR COLLEGE DISTRICTS FOR THE YEARS 1964-1965 THROUGH 1966-1967, INCLUSIVE

Income Category	Cochise	Graham	Maricopa	Yuma
Operational Income				
Cash Balance	5.8 %	4.8 %	0.3 %	3.3 %
State Aid	30.2	37.2	40.5	32.6
District Tax	28.0	15.8	26.2	25.5
Tuition	4.4	19.3	3.8	6.1
Federal Aid	1.3	1.9	1.5	1.4
Other Operational Income	1.3	3.0	0.6	4.5
Total Operational Income	71.0	82.0	82.9	73.4
Capital Funds Income				
Cash Balance	8.0	5.6	8.7	7.7
State Aid	6.9	8.6	12.8	8.1
District Tax	10.9	0.4	4.5	7.3
Dormitory Rent	0.9	-.-	-.-	1.0
Interest Earned	0.4	0.1	0.2	0.3
Federal Aid	-.-	3.3	0.7	0.7
Other	1.7	-.-	0.1	1.4
Total Capital Funds Income	28.8	18.0	17.0	26.5
Total Income From All Sources*	99.8	100.0	99.9	99.9

*Does not necessarily total 100 percent because of rounding off of individual percentages.

one can see that 44.4 percent of the Yuma district's operational income came from state aid during the three school years or that federal aid constituted 2.6 percent of the capital funds money that the district received.

In Table 6.10 may be found the total income of the four districts that were functioning during the school years 1964-65 through 1966-67. The dollar amounts recorded are statewide totals. State aid made up 51.73 percent of the operational income and 42.09 percent of the capital funds income of the districts taken collectively. This was 49.18 percent or approximately half of the total income from all sources for the two-year colleges. District taxes constituted 34.61 percent of operational income, 19.85 percent of capital funds income, and 30.70

TABLE 6.9

AVERAGE PERCENTAGES OF INCOME FROM VARIOUS SOURCES FOR ARIZONA JUNIOR COLLEGE DISTRICTS FOR THE YEARS 1964-1965 THROUGH 1966-1967, INCLUSIVE

	Percentage of Operational Income				Percentage of Capital Income			
Income Category	Cochise	Graham	Maricopa	Yuma	Cochise	Graham	Maricopa	Yuma
Operational Income								
Cash Balance	8.2	5.9	0.4	4.5				
State Aid	42.5	45.4	55.6	44.4				
District Tax	39.4	19.3	36.0	34.7				
Tuition	6.2	23.5	5.2	8.4				
Federal Aid	1.9	2.3	2.0	1.8				
Other Operation Income	1.7	3.7[a]	0.9	6.1[a]				
Total Operational Income	99.9	100.0	100.1	99.9				
Capital Funds Income								
Cash Balance					27.8	30.9	32.1	29.2
State Aid					23.9	47.8	47.1	30.7
District Tax					37.6	2.3	16.7[b]	27.5
Dormitory Rent					3.2	-.-	-.-	3.8
Interest Earned					1.5	0.7	0.6	0.9
Federal Aid					-.-	18.1	2.7	2.6
Other					6.0	0.1	0.9	5.3
Total Capital Funds Income					100.0	99.9	100.1	100.0

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[a] Included federal aid, if any, during 1965-1966.
[b] Included interest during 1965-1966.

TABLE 6.10

TOTAL INCOME OF THE FOUR FUNCTIONING* JUNIOR COLLEGE DISTRICTS IN ARIZONA BY INCOME CATEGORY WITH PERCENTAGES FROM VARIOUS SOURCES, 1964-65 THROUGH 1966-67, INCLUSIVE

Income Category	Total Amounts for the Three Years	Percentage of Operational Income	Percentage of Capital Funds	Percentage of Total Income
Operational Income				
Cash Balance	650,823.11	2.32 %		1.70 %
State Aid	14,524,825.00	51.73		38.02
District Tax	9,718,214.25	34.61		25.44
Tuition	2,087,444.49	7.44		5.46
Federal Aid	556,907.09	1.98		1.46
Other Operation Income	539,353.32	1.92		1.41
Total Operational Income	28,077,567.26	100.00		73.49
Capital Funds Income				
Cash Balance	3,149,953.03		31.10 %	8.24
State Aid	4,263,050.00		42.09	11.16
District Tax	2,010,410.90		19.85	5.26
Dormitory Rent	91,403.54		.90	.24
Interest Earned	76,553.07		.75	.20
Federal Aid	328,524.73		3.24	.86
Other	209,232.62		2.07	.55
Total Capital Funds Income	10,129,127.89		100.00	26.51
Total Income From All Sources	38,206,695.15			100.00

*Pinal County district was inactive most of the time covered by this table.

percent of total income from all sources. Cash balances made up nearly 10 percent of available funds from all sources; most of this money was for capital purposes. Tuition provided 5.46 percent of total income while federal aid supplied 2.32 percent. Miscellaneous sources provided the balance of income. With reference to federal aid, it is interesting to note that presently about eight percent of the support nationwide for the public schools (Grades K through 12) is said to be furnished by federal sources.

EXPENDITURES

The dollar amounts of operational expenses for the districts that were in operation during the years 1964-65 through 1966-67, inclusive, are listed at the top of Table 6.11. These amounts range from $576,030.00 in 1964-1965 for Cochise County district to $7,355,192.75 for Maricopa County in 1966-1967. Expenses increased each year in every state as a whole, in the latter case by slightly over $2,000,000 per year. This, of course, was to be expected in times of increasing numbers of students, program expansions, salary raises, and inflationary tendencies in maintenance and operating costs. Percentagewise the increases varied from only 11.7 percent in the Yuma County district from 1965-1966 to 1966-1967 to a high of 40.8 percent in Cochise County between the years 1964-1965 and 1965-1966. (It should be recognized, however, that a high percentage of increase may be in evidence when the base from which it is figured is low.) For the state as a whole the increase in operational expenditures was 33.2 percent between the first pair of years and 25.4 percent between the second pair. In dollar amounts the increase between the second two years for operational expenses statewide was about $39,000 more than it had been between the first two years. Thus, while the dollar amount of increase went up, the percentage of increase statewide went down.

Costs per full-time student equivalent provide a better basis of comparison from year to year than do total costs. Therefore the FTSE and the operational expenses per FTSE for the years indicated are also given on the table. A study of the table shows that costs per FTSE were lower in Graham and Yuma Counties in 1966-1967 than they were in 1964-1965. Cochise and Maricopa Counties experienced decreased costs in 1965-1966 from those of 1964-1965 but the expenses per student increased above 1964-1965 levels in 1966-1967.

TABLE 6.11

OPERATIONAL EXPENSES FOR ARIZONA JUNIOR COLLEGE DISTRICTS
TOTAL AMOUNTS AND PER FULL-TIME STUDENT EQUIVALENT
1964-1965 THROUGH 1966-1967, INCLUSIVE

	Cochise	Graham	Maricopa	Yuma	State Total
Operational Expenses					
1964-65	$ 576,030.00	$ 626,840.03	$ 4,102,826.00	$ 899,690.28	$ 6,205,386.31
1965-66	810,964.33	681,482.00	5,355,238.51	1,115,340.99	8,263,025.83
1966-67	972,195.10	786,635.22	7,355,192.75	1,245,445.04	10,359,468.11
Percent of Increase in Operational Expense					
64-65 to 65-66	40.8 %	8.7 %	30.5 %	23.9 %	33.2 %
65-66 to 66-67	19.9	15.4	37.3	11.7	25.4
Full-Time Student Equivalent - Oct. 1					
1964-65	567	654	7,134	953	9,308
1965-66	824	858	9,411	1,134	12,227
1966-67	811	942	10,966	1,333	14,052
Operational Expense Per FTSE					
1964-65	$ 1,015.92	$ 958.47	$ 575.10	$ 944.06	$ 667.31
1965-66	984.18	794.26	569.04	983.54	675.80
1966-67	1,198.76	835.06	670.72	934.31	737.22
Percent of Increase (Decrease) in FTSE					
64-65 to 65-66	45.3 %	33.0 %	31.9 %	19.0 %	31.5 %
65-66 to 66-67	(1.6)*	9.8	14.2	17.5	14.9
Percent of Increase (Decrease) in Operational Expense Per FTSE					
64-65 to 65-66	(3.1)* %	(17.2)* %	(1.1)* %	4.2 %	1.3 %
65-66 to 66-67	21.8	5.1	17.9	(5.0)	9.1

*Figures in parentheses represent decreases.

Statewide the average operational cost per FTSE went up between 1964-1965 and 1965-1966 only $8.49, that is, from $667.31 to $675.80. This was only 1.3 percent. Between 1965-1966 and 1966-1967 the increase was $61.42 or 9.1 percent. Since the FTSE went up 31.5 percent and 14.9 percent between the above pairs of years it became evident that increase in enrollment was by far the most important reason for increased operational costs.

The next matter to which attention was given was the determination of what proportions of the operational expenses and capital outlay-debt service moneys were expended in various traditional budget categories. For this purpose Tables 6.12 and 6.13 were devised. Here, again, a three-year average was used for each junior college district so that there might be a smoothing out of any marked deviations from a usual pattern during a given year for the individual districts.

For the state as a whole nearly 70 percent of operational expenses were for instruction during the period from 1964-1965 through 1966-1967. Cochise, Graham and Yuma County districts were below this percentage while Maricopa was above it. Instructional costs were 51.52 percent of total expenditures statewide.

Plant operation ranked second for the four districts combined with 9.78 percent of operational expenses going for this purpose. Maricopa County district expended the smallest percent of operational expense moneys on plant operations (7.79 percent) while Cochise district spent the largest proportion (15.25 percent). Statewide, administration and fixed charges costs were about the same and constituted about 7.5 percent of operational expenditures or 5.5 percent of total expenditures. Among the individual districts, however, there were considerable deviations from these percentages, as Table 6.13 makes clear.

Plant maintenance expenditures in the districts seemed relatively low and for the state the average was 3.53 percent of operational expenditures or 2.61 percent of total expenditures. All campuses seemed to be well maintained, however. With the exception of auxiliary services in three districts and community services in one, other categories of expenditures were less than one percent of operational expenses.

TABLE 6.12

AVERAGE PERCENTAGES OF EXPENDITURES BY TRADITIONAL BUDGET CATEGORIES FOR ARIZONA JUNIOR COLLEGES ON A STATEWIDE BASIS, 1964-1965 THROUGH 1966-1967, INCLUSIVE

Expenditure Category	Percentage of Total Operational Expenses	Percentage of Debt Service and Capital Outlay	Percentage of Total Expenditures
Operational Expenses			
Administration	7.52 %		5.57
Instruction	69.58		51.52
Auxiliary Services	1.05		.78
Plant Operation	9.78		7.24
Plant Maintenance	3.53		2.61
Fixed Charges	7.51		5.56
Contingency Fund	.68		.50
Tuition	.19		.14
Community Service	.15		.11
Total Operational Expenses	99.99		74.03
Capital Outlays and Debt Services			
Special Levies and Debt Services		20.48 %	5.32 %
Capital Outlays		79.52	20.65
Total C.O. & D.S.		100.00	25.97
Grand Total			100.00

CAPITAL INVESTMENTS

In Chapter 3 the school plant facilities were very briefly described. The investment in these facilities was not discussed. That matter is presented below for the operating districts.

As reported by the respective districts in May of 1968, the investment in land, buildings and equipment was as follows:

Arizona Western College

Land	1,600.00	
Furniture and Equipment	1,413,312.81	
Buildings	4,848,608.93	$6,263,521.74

Cochise College

Site and Site Improvement	146,407.71	
Buildings and Building Improvement	4,327,412.92	
Furniture and Equipment	649,092.10	$5,122,912.73

Eastern Arizona College (Appraised Value)

Land	165,000.00	
Building Replacement Value	3,071,645.00	
Furniture and Equipment	655,500.00	$3,892,145.00

Maricopa District

Land and Land Improvement	2,278,064.28	
Buildings	10,835,191.71	
Equipment	2,645,953.14	$15,759,209.13

It should be noted that the figures for Eastern Arizona College are appraised value amounts. For this institution with an 80-year history the actual costs of some facilities, if available, might not be particularly meaningful.

TABLE 6.13

AVERAGE PERCENTAGES OF EXPENDITURES BY TRADITIONAL BUDGET CATEGORIES FOR ARIZONA JUNIOR COLLEGE DISTRICTS, 1964-1965 THROUGH 1966-1967, INCLUSIVE

Expenditure Category	Percentage of Total Operational Expenses				Percentage of Debt Service and Capital Outlay				Percentage of Total Expenditures			
	Cochise	Graham	Maricopa	Yuma	Cochise	Graham	Maricopa	Yuma	Cochise	Graham	Maricopa	Yuma
OPERATIONAL EXPENSES												
Administration	10.84	9.77	6.33	9.82					8.16	9.77	4.63	7.40
Instruction	60.25	64.43	72.88	62.63					45.36	64.43	53.29	47.18
Auxiliary Service	3.15	3.22	0.30	2.03					2.37	3.22	0.22	1.53
Operation of Plant	15.25	11.84	7.79	14.77					11.48	11.84	5.70	11.13
Maintenance of Plant	2.10	3.94	3.57	4.10					1.58	3.94	2.61	3.09
Fixed Charges	6.98	6.80	8.00	5.81					5.25	6.80	5.85	4.38
Contingency Fund	-.--	-.--	0.84	0.78					-.--	-.--	0.62	0.58
Tuition Other Districts	-.--	-.--	0.28	-.--					-.--	-.--	0.20	-.--
Other Expenses	-.--	-.--	-.--	-.--					-.--	-.--	-.--	-.--
Community Service	1.43	-.--	-.--	0.68					1.08	-.--	-.--	0.01
Total Operational Expenses	100.00	100.00	100.00	100.00					75.28	78.35	73.12	75.33
CAPITAL OUTLAYS AND DEBT SERVICES												
Special Levies and Debt Services					39.49	26.31	11.84	53.53	9.76	5.70	3.18	13.20
Capital Outlay					60.51	73.69	88.16	46.47	14.96	15.95	23.70	11.46
Total Capital Outlay and Debt Services					100.00	100.00	100.00	100.00	24.72	21.65	26.88	24.67
GRAND TOTALS									100.00	100.00	100.00	100.00

CHAPTER VII

CHAPTER VII

A LOOK TO THE FUTURE

In this the final chapter of the survey report we try to look to the future of the junior college movement in Arizona. Before looking ahead, however, let us briefly review the highlights of the preceding chapters.

SUMMARY

Although there are a few examples of two-year colleges prior to 1900, the junior college is essentially a twentieth century American development. The years from 1900 to 1920 were a "Formative Stage" during which nearly 200 institutions were established. From 1920 to 1945 was a "Period of Diversification" when junior colleges broadened their purposes and scope. By 1945 there were 648 junior colleges in America with an enrollment of 295,457 students. The present stage of development is known as the "Period of the Community Junior College" and emphasizes a close working relationship with the community, with many adult programs and a vast array of community services. By early 1968 there were 900 public junior colleges enrolling 1,665,000 students and every state had at least one such institution.

In Arizona prior to the enactment of the junior college law of 1960, there were only two junior colleges in the state: Eastern Arizona College at Thatcher, which traces its beginnings to 1888, and Phoenix College in Phoenix, which got its start in 1920 -- the same year that Eastern Arizona College started offering college level courses. The 1960 law (Chapter 6.1 of Title 15 A.R.S.) provided for a state junior college system. In 1960 a State Board of Directors for Junior Colleges was appointed and since then all public junior colleges in Arizona have become part of the state system. At present seven of the fourteen counties in Arizona have junior college districts, the order of establishment being as follows: Graham, Maricopa, Yuma, Cochise, Pinal, Pima, and Yavapai. The first four of these have been operating colleges while Pinal and Yavapai Counties plan for opening in the fall of 1969 and Pima in the fall of 1970.

Maricopa County has four junior colleges at present, namely, Phoenix, Glendale, Mesa, and the recently established Maricopa Technical College. Plans are progressing to establish a fifth Maricopa district two-year college at Scottsdale.

The basic functions of junior or community colleges have generally been identified as follows:

1. Preparation or college transfer
2. Terminal or semi-professional
3. Counseling and Guidance
4. Basic skills or general education
5. Rehabilitation and democratization
6. Community service
7. Retraining and up-dating, and
8. Cultural enrichment

These institutions commonly carry out the above functions under the philosophical orientations or beliefs that the nation's most valuable resources are her human resources; that these resources can be nurtured optimumly by appropriate educational opportunities; and that the provision of such opportunities will redound to the advantage of the nation as well as of the individual. Junior colleges are unique institutions; consequently many of their problems are in this same category. Also, because they are different they have evolved their own philosophical guidelines.

The roles of the Arizona State Board of Directors of Junior Colleges and of the district boards is rather thoroughly spelled out in the state statutes. Arizona law centralizes considerable power and responsibility in the State Board. This agency has delegated much responsibility to the district boards in areas where the problems are local in nature but at the same time it has faced up to its own responsibilities. A number of developments indicate a willingness on the part of both local institutions and the state administration to meet expanding needs.

A number of factors indicate a substantial growth in junior college enrollment in the years ahead. The statewide growth in population, when centered in 1950 census data for the period 1940 to 1960, suggests a growth in population for the state of 5.6 percent per year. This may well be a minimum or lower limit. Maricopa County alone increased in population from 1940 to 1960 in an amount nearly equal to the population of the state as a whole in 1940. Maricopa, Pima, Coconino, Pinal and Yuma Counties registered increases of well over 100 percent during the 20-year period. Navajo County increased about 50 percent while all others, except Mohave, increased by percentages ranging from 9 to 32 percent. Although Mohave County went down in population during the period prior to 1960, since that date there is every indication of considerable growth in the county. State and county population trends suggest, then, that junior college enrollments will go up considerably in the future.

Statistics on high school completion suggest even more significant growth in junior college enrollments. From 1957 through 1967 the number of graduates from public high schools alone increased from 7,575 to 19,447, an average annual increase of 1,187 students. Parochial school graduates would further increase these numbers by about 9 percent. Numbers of high school graduates have been increasing by more than 10 percent per year on the average. Three-fourths of the high school graduates in Arizona come from Maricopa and Pima Counties. Linear projections of all Arizona high school graduates yield a possible statewide total of 37,723 for the spring of 1977. Projections based on a cohort survival technique are more conservative but even they show the possibility of around 32,000 twelfth graders in the public school alone by 1978.

The junior colleges themselves more than doubled in headcount enrollments from October of 1963, when the headcount was 10,363, to October of 1967, when the headcount reached 23,735. The junior colleges during that time increased almost as much as the universities and other higher education institutions in the state. Furthermore, enrollment in the two-year schools, in terms of full-time student equivalents, nearly tripled from 1963 to 1967, the growth being from a FTSE of 5,741 in the 1963 to 15,615 in the fall of 1967.

In comparison with 1966 national data Arizona's junior colleges outside Maricopa County ranked about average in size. When and if Maricopa's junior colleges stabilize at around 5,000 enrollment they will be among the large junior colleges nationwide. National data also suggest that larger proportions of all college students in the state may be found in junior colleges in the future and that there will be a greater proportion of sophomores than in the past.

Projections of headcount and FTSE enrollments for the next decade for the existing junior colleges and for the districts that will soon be in operation forecast steady growth of the institutions. A cohort survival technique projection, which is very conservative, shows the possibility of a headcount of nearly 53,000 by 1977 with the FTSE equaling 36,000.

If other counties are authorized to establish junior colleges the enrollments will be much higher. A linear projection, for example, indicates the possibility of in-county resident enrollments alone reaching over 60,000.

Arizona's junior college facilities were found to be well-maintained college plants. They have many excellent buildings but, with the exception of the recently established Maricopa Technical College, they all have building needs. The sites range in size from 640 acres at Arizona Western down to the small fraction of a block occupied by Maricopa Technical College. The facilities at AWC, Cochise, Glendale, and Mesa are practically new. At Mesa, however, considerable instructional space is provided through the use of portable wood frame buildings. Eastern Arizona College has a new south campus to supplement its north campus. Phoenix College has some nearly new permanent facilities, a number of substantital somewhat older but attractive buildings and many portable buildings. Maricopa Technical College occupies a single building -- a seven story plus basement concrete and steel structure in downtown Phoenix. In the fall of 1967 EAC had the most gross building space available per FTSE (231 square feet) while Phoenix College had the least (34 square feet), but it was renting some space to accommodate its students. The investment in facilities by the four operating districts was as follows: Arizona Western College -- $6,263,521, Cochise College -- $5,122,912, Eastern Arizona College -- $3,892,145 (appraised value), and Maricopa County Junior College District $15,759,209. Pima, Pinal and Yavapai Counties were moving forward with plans to establish campuses to meet their needs.

A study of the utilization of general classrooms and special purpose instructional areas showed that for the fall of 1967 Mesa Community College had the highest percentage of utilization of both of the above types of instructional spaces. Late afternoon percentages of utilization of general classrooms were much reduced in all schools except Mesa. As is common nationwide, special purpose classrooms were used less than the general classrooms. Utilization of general classrooms held up quite consistently throughout the school week but for special purpose areas the percentage of use was relatively low on Fridays. Though not tabulated, it was found that a number of colleges, Phoenix, for example, had heavy usage of facilities in the evenings.

Most of the subject matter fields or curriculum program areas in Arizona's junior colleges were too small to be organized as departments. In fact 53 out of 173 such areas had only one person working in the field (not necessarily full time). Forty other program areas had two persons working in the area and 23 had three persons. In most institutions the English department was the largest (26 persons in this department in Phoenix College), the business department typically was second largest and the physical education department third in size from the standpoint of number of personnel.

On the average in Arizona for the fall of 1967 the typical department contacted its students 3.2 hours per student per week. A study of student loads and student contact hours per week per teacher seemed to indicate that the teachers in the Maricopa County Colleges tended to have the heaviest loads on the average but there was a wide range in the amount of faculty loads among the different departments and colleges.

It appeared that 90 percent of the instructional staff in Arizona's two-year colleges had the master's degree as their highest degree; about 4 percent held the bachelor's as their highest degree; three-tenths of 1 percent the educational specialist's degree; and 6.4 percent possessed the doctor's degree. This finding rated well with findings from previously reported national studies.

The average total teaching experience of the instructional staffs ranged from 8.1 years at AWC to 14.1 years at Phoenix College with the remaining institutions averaging approximately 10 years total teaching experience for their instructional personnel. For the six institutions studied the average amount of college teaching experience was 5.2 years.

A study of faculty turnover revealed that the most common reason for leaving a junior college was to teach in a four-year college or university while the second most frequently mentioned reason was to teach in another junior college. Health and personal reasons, graduate study and to enter business or industry were the other most frequently mentioned reasons. There was a wide range in the percentage of resignations among the instructional staffs of Arizona's junior colleges.

Services provided by junior college student personnel specialists are many and varied in nature. The scheme of services typically found in student personnel programs include the following functions: Orientation, appraisal, consultation, regulation, participation, service, and organization. Most student personnel specialists in Arizona's junior colleges saw their programs as being broad in scope and high in quality of service performed but typically there was a shortage of time for the all important counseling function. Either more counselors were needed or present staffs needed to be freed of non-counseling duties so that more time could be available for this most important work. The typical student personnel specialist held the master's degree with the basic orientation in the field of counseling. A number of problems and needs exist in the counseling area.

The educational program is the heart of the junior college operation. This program is affected by the multitude of forces that act upon society in general and on social and curriculum needs in specific. The tremendous changes that are taking place in the state and the nation require that the curriculum program and the means by which students are exposed to it be adapted to new conditions. The two-year colleges in Arizona offer lower division university parallel courses for transfer students, semi-professional, technical and skills programs for terminal vocational students, joint or combination programs involving elements of both of the above, and enrichment and cultural programs for youth and adults. Refresher, upgrading and retraining programs for adults are provided. There are both uniformity and diversity in the educational offerings among the different colleges.

A concentrated and continued effort on the part of all educational institutions in the state will be required if Arizona is to keep abreast of manpower needs in the coming years. "Manpower Directions 75," published by the Arizona State Employment Service makes some observations pertinent to junior college educational program planning. The role of the junior colleges in the achievement of manpower objectives is readily discernible. In the light of past and present performance it is not likely that the junior colleges of Arizona will abdicate their responsibility in meeting the state's manpower needs, especially since excellent cooperation is being provided by the State Department of Vocational Education.

An examination of some studies of holding power of selected junior colleges in Arizona showed that the situation was not unlike the national picture. It was felt that although improvement can be made in alleviating the discontinuance problem, data indicate that the problem is less acute than one might expect and that the colleges are presently doing a good job at retaining their students sufficiently long to achieve their objectives. Many of the problems could likely be alleviated through improved curriculums and increased guidance and counseling services.

Studies of the characteristics of junior college students in the state point out many similar characteristics along with a few that are different from the national picture. Of significance is the fact that approximately three-fourths of the students now attending junior colleges in Arizona are seeking educational and career goals that require four or more years of college preparation. Considering that about one-third of these students do less than average work it is unlikely that this number should or would be able to go on to senior college. Furthermore, job openings are predominately in the technical-vocational areas. More successful educational and vocational counseling techniques seem to be needed. The percentage of first-year dropouts may be reduced if more suitable curriculums are selected by larger numbers of students.

It was found that for the three-year period from 1964-65 through 1966-67 for the state as a whole, 91.5 percent of the junior college students came from the county in which the college is located while 6 percent came from other counties and 2.5 percent from outside the state. These percentages reflected the Maricopa County influence for in that county 97.4 percent of the students were county residents. Graham County, for example, exhibited a completely different picture. County residents made up only 31.5 percent of the student body while 59.4 percent came from within the state and 9.1 percent from the outside.

An important facet of the Arizona junior college situation is the financing of the institutions. The significant increase in net assessed valuation for the state as a whole, from $1,311,972,257 in 1958 to $2,351,583,270 in 1967, is an encouraging sign for financial support of the educational institutions. Predicted future trends indicate an anticipation of further growth in the assessed value of the property of the state. Maricopa County had 45.7 percent of the state's assessed valuation in 1967 while Pima County had 19.8 percent. Only Apache and Santa Cruz Counties with $26,284,546 and $12,197,355 in 1967 net assessed valuation respectively did not approach minimum legal requirements relative to assessed valuation for the establishment of a junior college under the state system.

There has been a trend for the assessed valuation per FTSE to go downward in the state. This trend may be offset temporarily by the state reappraisal program. In the years ahead, however, student enrollments will very likely increase more rapidly than net assessed valuations.

The growth in retail sales in Arizona, from $1,573,723,000 in 1958 to $2,409,017,000 in 1958, is an indication of the economic health of the state. Projections of continuing upward trends in all counties, though Greenlee County may lag, at least temporarily, suggest that the citizens of the state will have the capability of supporting expanding educational programs.

Junior college district tax rates have been increasing but they have not been going upward as rapidly as have the student enrollments.

State financial aid has been the most important source of operational income for the junior colleges while the district tax was the second most important source. Small percentages of operational funds came from cash balances, tuition, federal aid, and other minor sources. With the exception of Cochise County district, state sources was also the most important source of capital outlay funds for the years 1964-65 through 1966-67, inclusive. For the colleges taken as a whole statewide, 49.18 percent of all income for all purposes came from the state, 30.70 percent from district taxes, 9.94 percent from cash balances, 5.46 percent from tuition, 2.32 percent from federal aid, and 2.40 percent from all other sources.

For the period 1964-1965 through 1966-1967, district operational expenditures ranged from $576,030 in Cochise County district for 1964-1965 to $7,355,192.75 for Maricopa County district in 1966-1967. During these years total expenses for operation statewide increased about $2,000,000 per year. Increased enrollment was by far the most important reason for increased operational expenses. Local district expenditures per FTSE varied considerably from the state averages of $667.31 in 1964-65, $675.30 in 1965-66, and $737.22 in 1966-67. Instructional costs accounted for nearly 70 percent of operational expenses or 51.5 percent of total expenditures. Just over 20 percent of total expenditures went to capital outlays -- an indication of the rapid expansion of the schools in Arizona.

THE JUNIOR COLLEGE: WHAT NEXT?

In looking to the future of junior colleges in Arizona a review of what may be on the junior college horizon nationally seemed appropriate. James W. Reynolds[1] writing under the above heading in a 1967 publication of the American Association for Higher Education indicated future trends as he saw them. In summary he stated that:

1. There will be an about face in the development of junior college programs from concern for articulation with four-year institutions to that of the high schools from which most of the students come. (He points out that the success of a program of education ultimately must be measured in terms of the extent to which it meets student needs and that after all only a minority of junior college students go on to four-year schools.)

2. Boards operating in local districts will increasingly be in substantial control of public junior colleges. (He states that this has been a trend for a long time and cites recent state legislation accelerating the trend.)

3. Metropolitan areas will experience greatly increased incidence of junior college establishment with centralized administration and multiple campuses. (Witness the Maricopa County situation.) Also, there will be increasing numbers of junior colleges established in smaller cities.

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[1] James W. Reynolds, "The Junior College: What Next?" In Search of Leaders, American Association for Higher Education, National Education Association, Washington, D.C. 1967, pp.223-226.

4. The improvement of instruction will receive more attention; more professionally competent deans of instruction will be employed; and junior college instructors will move to the forefront in developing instructional innovations.

5. With administrative support, student personnel services will be found more frequently and strong counseling programs will be emphasized.

6. Counseling services will be extended to adults in the community as a part of junior college community services.

7. "Terminal" and "transfer" student classifications will disappear as greater dependence will be placed on junior colleges to provide education for students in the first two years of college. More assistance will be given students in making decisions about the length in years of their college work.

8. With over half the nation's college freshmen and sophomores in junior colleges there will be decreasing concern for articulation of junior college curriculums with those of the four-year colleges. (Junior colleges will gain "bargaining power.")

9. Junior colleges will develop good technical programs and absorb the competition from area vocational schools. General education will receive proper emphasis in programs of technical education.

10. The technical-vocational programs will become integral parts of the total curriculum.

11. Legislatures will substantially increase junior college financial support while local tax support continues. Free public education through the fourteenth year will be provided as the schools move in the direction of becoming tuition-free.

12. Private junior colleges with services identical to those of public institutions will go public or four-year or be eliminated.

13. Those private junior colleges which have outstanding programs and faculty and a status of uniqueness will continue to thrive but tuition will be raised.

14. The hope that the day will come when sizeable numbers of people will have a fairly accurate understanding of just what a junior college is!

Reynolds gives details and states the case so much better than the above summary. His article is recommended to those deeply interested in the junior college movement. An examination of the items in his list indicates that if the predictions are accurate the junior colleges of Arizona have some distance left to travel. One is impressed, however, by the number of predictions which have already been achieved or are in the process of achievement in this state.

QUESTIONS RELATED TO ADMINISTRATIVE PHILOSOPHY

As the state looks to the future of its junior college system it may ask: How much centralization of control over the activities of the junior colleges shall be established by the Arizona State Board of Directors for Junior Colleges? There are, undoubtedly, many points of view on this matter.

Some involved persons might wish the State Board to exercise a rather strict control over most of the aspects of the individual institutions. At the other extreme are those who believe that the individual institution, its board and administration, should have as great a freedom in developing and operating the college as the law allows.

The Attorney General's opinions and requests from the State Auditor have placed and will place further responsibility upon the State Board. Beyond these specifics the State Board is free to, if not obligated to, develop a modus operendi which will fit its own philosophical stance on operating procedure.

Since there seems to be a natural tendency for anybody in authority to drift to centralization of authority within its sphere of influence, it, therefore, requires a conscious effort to avoid falling into the errors of over-centralization. This effort probably can be most effectively channelled by the development of a statement upon which there is general agreement, which will serve as the guiding principles in the determination of its operations.

In attempting to arrive at such a statement a governing body must keep several things in mind:

1. The law or statutes under which the body is created.

2. The purpose it is supposed to serve, implied and implicit.

3. The human equation with which it is expected to deal.

4. The nature of the endeavor over which it has some direction.

Too much centralization and over-direction has a tendency to become oppressive. Oppression leads to dissatisfaction, unrest, rebellion, inefficiency and discouragement of the creative spirit.

On the other hand relative autonomy can lead to increased efficiency, to the development of highest aspirations in those serving, in increased morale and in orderly delegation of responsibility and authority.

The delicate balance desirable in this situation will likely come from informed and committed leadership. The nature of the educational enterprise, depending as it does, upon the best efforts of individuals working with other individuals in a peculiar relationship not duplicated in any other human activity, requires a finesse and sensitivity not so apparent in other endeavors.

The Arizona State Board of Directors for Junior Colleges would do well to reexamine the philosophical basis upon which its role in the total operation can be identified and supported. Underlying the establishment of such a basis are certain specific questions that should be answered. Among these are the following:

1. What is its role in campus planning and development? Should it do the planning or only serve as a brake on what seems to it to be unwise or unneeded expansion plans? Should it maintain a central planning office or should it depend upon the district boards and their administration to work out their own program while maintaining a close but informal contact with the State Office which in turn would serve in a resource and advisory capacity?

2. What is its role in curriculum? Should it serve to prevent unwise duplication of programs by reviewing from time to time the offerings of each college -- or should it individually approve every course offered by each institution? Should it depend upon the faculty, administration and boards of the individual institutions to develop innovations or prescribe them from the central office?

3. What is its role in staffing the institutions? Should it set uniform minimum qualifications on a statewide basis or leave these decisions to the local boards and administrators? Should it establish a uniform salary schedule statewide or leave these matters to local boards operating within the framework of their own financial structure? Should it fix statewide maximum and minimum teaching and administrative loads or leave such decisions to local institutions and boards? Should it establish statewide professional standards, codes of ethics and bargaining practices or leave these matters in the hands of local institutions to be handled on the basis of the specific situations?

4. Should the State Board give consideration to alternate plans for organizing junior colleges within the State? If an alternate plan appears to be superior to the present legal provision, should the Board seek for change in the law?

Possibilities to be considered are:

a. High school districts maintaining junior colleges (same or separate district boards). (This arrangement has not been particularly productive to date.)

b. Unified districts maintaining multiple colleges all under one district board, but with a high degree of local autonomy for Deans and sub-staffs on each campus. (Present situation.)

c. Multicampus junior college districts operating under one district board and one administrative staff, with assistants with little local autonomy on each campus.

d. Junior College districts for each junior college each having its own district board. This may require more than one district and district board in a county.

e. All junior colleges under one state board and without district boards. (Operation comparable to present university system.)

f. A sixth possibility lies in promoting a flexible approach which accommodates several of these five simultaneously with an eye toward experimentation and evaluation.

Each of these six types of organization has advantages and disadvantages and the State Board should consider them in the light of projected populations and needs. Illinois, California, and New York have had recent experience which might provide additional guidelines for Arizona. The important issue here is that whatever direction is taken should be chosen from the alternatives on the basis of careful consideration and study.

5. What stand should the State Board take with regard to tuition or fees? Should the Board support and regulate a uniform tuition and fee policy for all junior colleges of the state or should district boards fix their own policies? Should special charges be allowed to impose a financial burden upon the student in subtle and round-about ways or does the Board look upon any charge to students beyond their activities program as an encroachment upon the principle of free education? Should the idea of capital improvements through student retired bonds be allowed to grow or should this be frowned upon as an abdication of responsibility of the district and state?

6. Should the State Board as a general practice resort directives, maximums, minimums, and regulations other than those set by law or should it confine its operation to service functions such as suggesting guidelines, consultant services, providing information, gathering statistical data, keeping records, interpreting the operation to the legislature and the state, conducting statewide research, maintaining professional relationships with the other levels of education endeavor, encouraging the educational establishment in the state by assisting in coordinating the effort, and otherwise cooperating with local boards and their respective colleges? The Board might well adopt the first practice if it is prudent in its actions or it could choose the latter policy without abdicating its responsibility. A third alternative may consist of a blending of the two.

With the advent of more junior colleges in the state the above questions require practical consideration in terms of the size of the State Office and the functions it will perform. There is a danger of creating an expensive bureaucracy at the state level that will assume more and more duties which might more properly be carried on at the local level. On the other hand if the State Office operates with too small a staff, it will not be able to provide the assistance that districts need.

Sometime it will be necessary for the Arizona State Board for Junior Colleges to come to grips with the basic question of the kind of control they wish to exercise, founded upon a consideration of the question of the degree of centralization that they have come to believe is good for the development of the junior colleges placed under their charge.

RELATIONSHIP WITH OTHER EDUCATION BOARDS

The philosophy of the junior college program in Arizona seems to have been and should continue to be one of cooperation and support. Jockeying for position of influence with the legislature or seeking financial favoritism on the part of any educational institution is seldom conducive to long-term progress. All levels of the educational establishment should, of course, request adequate financial support but never at the expense of some other level.

In matters of attracting students the emphasis should be upon the appropriateness of the program for the individual rather than upon indefensible recruiting.

Every effort should be made among institutions and levels of program to encourage cooperation and support in an effort to bring the best possible educational service to all patrons of the junior colleges. Willful depreciation of one educational institution by another would inevitably redound to the disadvantage of both.

PROGRAM OFFERINGS

Since the economy of the state should not support unnecessary duplication of highly specialized and expensive programs, it seems desirable that the educational program be further coordinated to meet the needs of students in a realistic and economical manner. This may require specific assignment of depth programs and specialized offerings to specific institutions or in some cases be expedited by flexibility in the utilization of facilities and personnel.

Let it be clear that there is no intent here to imply that we cannot afford good education in Arizona but, as a matter of maintaining proper public relations and effectively utilizing the resources of the state, education should guard against extravagance and waste.

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POSSIBLE GUIDELINES TO FUTURE ACTION

The following are suggested as possible guidelines for future action. They are not presented as recommendations, but it would seem that they merit careful consideration. No order or priority is intended by the order in which the items are presented.

1. Proceed with more than usual prudence and caution before deciding to add to existing facilities for purposes of accommodating out-of-county students at the smaller junior colleges.

This does not preclude replacing obsolete facilities as the need arises nor does it suggest delaying the erection of needed facilities to accommodate educational programs and services for the citizens of the home county. It does suggest, however, that enlargement of facilities should not be at the expense of denying a close-to-home education opportunity at a later date for youth and adults in areas now remote from a junior college. The districts should concentrate on local needs.

2. In harmony with the growing concern for the welfare of our people, encourage the establishment of junior colleges in the counties that do not now have them as soon as these counties meet criteria that would permit a satisfactory minimum educational program.

This is not to suggest that in all instances the aim would be to have each county in a separate junior college district coterminous with the boundaries of the county. In some cases a joint junior college district made up of two or even three counties may be the best means to provide the needed strength. Under this latter organizational arrangement, there would be several possibilities for extending junior college benefits into all counties making up the joint district. One of these would be to have one main campus in the district where a rather complete or comprehensive program would be offered and to place auxiliary centers in population areas that were large enough to support less extensive programs, carefully tailored to meet community needs.

It would appear on logical grounds that the most efficient and economical plan for providing higher education to remote communities would be by means of extension courses, which would offer a partial but no less desirable program of course offerings. For communities 75 or more miles away, the extension plan may be the only feasible plan to bring certain junior college opportunities to large numbers of persons, particularly adults.

The experience of Arizona Western College and Cochise College in offering courses at a considerable distance from the campus will be very valuable. It may be another year or two before they can evaluate the success and specific characteristics of such an extension program. In some circumstances such a plan may be established on a temporary basis in certain areas until such time as an auxiliary center or a full scale junior college may be warranted. There may be circumstances in some counties in which the provision of such extension educational opportunities may be planned as relatively permanent programs.

3. Arrange for the exchange of students from one junior college district to another on the basis of the home county paying tuition in the following circumstances:

A. When the home county district does not offer the educational program area in which the student wishes to major. (This may mean that the student will attend a junior college in the county of his residence for a semester or two, depending upon the point in his studies when some degree of specialization commences.)

B. When a junior college is beyond reasonable commuting distance in the home county and there is a junior college near enough in an adjoining county that the student may commute to and from to his obvious advantage.

4. Work for interstate agreements with neighboring states so that students living near state boundaries may attend the junior college nearest at hand regardless of the state in which that junior college may be located. (An open-door policy on this regardless of age may be desirable, but in any event it surely ought to apply to those under 21 years of age.)

5. Follow a policy of discouraging junior colleges from becoming too large and continue to encourage the establishment of multiple campuses in populous counties.

6. Protect the vocational-technical facet of the junior college educational programs in the state against de-emphasis resulting from pressures to move the colleges toward academic scholarship, educational sophistication, or university-like institutions.

(As data reviewed in Chapter V should make clear, half or more of the workforce in the 1970's will need vocational and technical education, while less than one-fifth will need preparation requiring the bachelor's degree or beyond.)

7. Continue to emphasize the leadership function of the State Office while maintaining a proper regulatory function as authorized by law.

For example, with the growing need for plant facilities, the addition of a consultant on building planning to the State Office staff (at least on a part-time basis) could prove to be beneficial both to the state and to the local districts.

8. Provide more opportunities for junior college instructional personnel and administrative and supervisory personnel at less than the top level to convene in statewide meetings to share problems and insights and to receive in-service opportunities.

9. Demonstrate further support for the vital counseling function of junior colleges by helping the districts resolve their problems including the development of adequately-manned counseling staffs housed in quarters that will meet the needs. (See again the section in Chapter IV on "Problems and Needs.")

10. Encourage further development of the junior colleges as civic and cultural centers where adults as well as youth may share many of the better things of life.

11. Consider whether or not broad subject matter preparation for junior college teachers does not seem to be desirable--particularly for teachers in smaller institutions since many of them are required to teach in two or more areas. (As some have said, perhaps the research aspect of the master's degree should be somewhat deemphasized. Furthermore, the Ph.D. may not necessarily be the ultimate answer for a quality-prepared junior college instructor.)

12. Support attractive salary schedules and liberal fringe benefits for junior college professional staff and other employees that high quality persons may be retained and that equally well-qualified persons may be recruited as the needs arise.

13. Consider the feasibility of working with the districts, perhaps on an experimental basis at first, on some aspects of program budgeting and accounting. The present traditional accounting system does not lend itself particularly well to the determination of the costs of given educational programs.

14. If plant facility utilization drops significantly and on a permanent basis in an area junior college, perhaps due to the opening of new institutions, be prepared to support the introduction of new special educational programs in such institutions.

15. Research the feasibility and economic aspects of such undertakings as:

a) Providing transportation aid or housing allowances for youth who live beyond reasonable daily commuting distance from campus.

b) Supplying state aid for counseling services on the basis of given counselor-student ratios.

c) Including all counties in the state of Arizona within the boundaries of junior college districts.

d) Determining when and if tax overburden develops and whether or not there should be financial equalization of the costs of an optimum educational program. (Such study should be fact finding in nature so that policy makers may have data upon which to base decisions.)

16. Continue and further implement cooperative follow-up studies with the State Department of Vocational Education of the occupational activities of students who have received vocational and technical preparation.

17. Since community junior colleges have distinct functions to perform, resist movements to transform these institutions into four-year schools.

18. Consider the following suggested philosophical orientation as a basis for further refining the Board's position on these matters:

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Suggested Philosophical Orientation for the State Board of Directors for Junior Colleges

A. That the Board accept the basic functions of the junior college as outlined in the survey.

B. That the Board accept the 13 philosophical guidelines listed in the survey under the topic "General Junior College Philosophy" as justification for existences of the junior college program in Arizona.

C. The Board accepts as a general statement of its role and responsibility the following:

The Arizona State Board of Directors for Junior Colleges is charged by the laws of Arizona to develop and maintain junior college educational-training programs. It has evolved certain guiding principles to assist it in determining policy and in making decisions. The first of these is to enforce the laws relevant to its educational responsibilities. It strives to keep the Arizona legislature and other pertinent agencies informed and to make legislative requests based on sound research and judgment. In addition, it works harmoniously with the other elected and appointive officials of the State of Arizona for the welfare of all levels of Arizona education.

Because several boards, one at the state level and one in each district, are responsible for the administration of the junior college program, the State Board endeavors to work cooperatively in establishing policies and administering practices and procedures.

The junior colleges of Arizona being non-selective in their admission policies, should offer a comprehensive educational program to meet the educational and training needs of the heterogeneous student bodies. Accordingly, the State Board requires the following curricular offerings:

1) General education courses for all full-time students.

2) Courses equivalent to those taken in freshmen and sophomore years of the university.

3) Vocational-technical and semi-professional programs suited to Arizona's economy and the general needs of our nation.

4) Continuing educational opportunity for all citizens capable of profiting from training and study beyond the high school.

5) Service and cultural programs to enrich the cultural life of the citizens.

6) Academic and occupational counseling with job placement services.

And, finally, The State Board emphasizes the necessity of enlightening research, experimentation, and consultation to keep the program alive with the best that is thought, written, and practiced in the field of junior college education.

D. The Board encourages the continued development of statements of philosophy by each junior college and emphasizes the need for constant evaluation of programs in an effort to assure that they reflect current philosophy. It recognizes that dynamic programs are the result of far-sighted and creative philosophical commitments originating in on-going study and research within the professional staffs of the respective institutions. Since the faculty and the students make an institution what it is, the Board envisions exciting and innovative activity at the college campus level and looks to these sources for change and progress.

E. The Board believes that it should make explicit its role in situations of shared responsibility and in so doing is guided by four basic considerations:

1) The law or statutes under which the body is created.

2) The purposes which the Board is supposed to serve, implied and implicit.

3) The human equation with which the Board is expected to deal.

4) The nature of the endeavor over which the Board has some direction.

F. In light of the above commitment the Board explicitly describes its role in the respective administrative areas to be as follows:

1) Campus planning and development.

The Board adheres to the grass-roots approach to campus planning and development. It leaves to local junior college districts and their communities the responsibility for selection of its educational program and teaching strategy, sites, architects and plans. The Board encourages close but informal contact with it and seeks to serve in an advisory capacity providing whatever resources and assistance it can. It honors its legal responsibility in determining location and purchase of sites only upon recommendation of the district board and carries out its other corporate functions when consensus between the state board and the district board has been achieved.

2) Curriculum.

The Board leaves to local institutions the determination of curriculum and the approval of courses. It encourages them to develop programs that meet local needs, are financially realistic and for which facilities and personnel can be provided. The Board looks with favor upon innovation and experimentation and cooperates with local institutions in setting up curriculum committees both local and statewide to coordinate curricula generally, to assign special or depth programs to specific junior colleges, and to encourage flexibility in the use of facilities and personnel.

3) Personnel.

The Board sets reasonable standards of qualification. It encourages adequate and equitable salaries and work loads for all local district personnel. It does not seek to regulate these on a statewide basis but is amendable to uniformity wherever district boards and local faculties reach consensus on a statewide basis. Other professional standards, codes of ethics and bargaining practices are left in the hands of the district boards. The Board recommends that district boards, administrators and staff work closely in determining policy in these important and delicate areas.

4) District organization.

The Board accepts an open door policy to the organization of junior college districts. It will continue to examine the alternatives for organization itemized in the section entitled "Questions Related to Administrative Philosophy" outlined previously in this chapter and will constantly seek new and better administrative arrangements. If such are found outside the present statutes, the Board will make every effort to initiate legislation which will allow for such change.

5) Service functions.

The Board generally will confine its operation to service functions such as establishing guidelines, consultant service, providing information, gathering statistical data, keeping records, interpreting the operation to the legislature and the state, conducting statewide research, maintaining professional relationships with the other levels of educational endeavor, encouraging the educational establishment in the state by assisting in coordinating the effort, and otherwise cooperating with local boards and their respective colleges.

6) Attendance policy.

The Board takes the position that in keeping with its special programs policy, under #2, immediately above, it is essential that resident students be allowed to attend any junior college within the state without tuition in cases where the program offering and the needs of the student would warrant such attendance. (Requests for such special attendance will be made to the Executive Director of the Board who will process the request on the basis of criteria and procedures approved by the State Board as recommended by a joint committee comprised of representatives of all junior college districts in the state.) (Inter-district agreements will require the approval of the Attorney General in addition to the State Board approval.)

7) Textbook selection.

The Board adheres to the policy of leaving the selection of tests and other instructional materials to the respective instructors and their local administrative staffs. The Board revokes any of its own policy statements which are contrary to this basic policy and advocates the removal of existing legal barriers such as A-4 of 15-679 of the Arizona statutes.

8) Tuition.

The Board supports the principle of free junior college education. It does, however, approve student assessments not directly connected with instruction in a minimum amount which in the years ahead will be increased only on the basis of the inflationary factor. The Board believes that such charges are defensible for the following reasons:

a. To cooperatively defray the expenses of student initiated activities.

b. To provide facilities for the school-related social and recreational activities of the student community.

c. To insure commitment, cooperation and sincerity of intent on the part of the student body.

The Board discourages the use of special charges in lieu of tuition such as library and course fees, which have a tendency to be applied to students generally.

9) Miscelleaneous.

In areas not specifically designated by law and not previously discussed such as library standards, military personnel, salary schedules, student activities, the Board will continue its policy of setting only minimum guidelines or assigning responsibility to the district board and their junior college staffs.

COST PROJECTIONS FOR OPERATIONAL EXPENSES

How much will it cost to finance Arizona's junior colleges in the years ahead? No one can answer this question definitely, but estimations are possible. This short subsection presents some estimates of operational expenses. No attempt has been made to estimate capital outlay and debt service expenditures.

As a base for projecting costs of operation the unit FTSE was used. As previously noted in Chapter VI the average operational cost per FTSE statewide for 1964-1965 was $667.31, for 1965-1966 it was $675.80, and for 1966-1967 it was $737.22. The increase for the second of these years over the first was only $8.49 per FTSE but for the third year the increase was $61.42 above 1965-1966 costs.

This information is repeated at the top part of the body of Table 7.1.

If one used the last available actual average operational cost figure per FTSE ($737.22) and increases that by 3 percent or 5 percent compounded annually, he obtains the amounts of annual increase in costs and the projected costs per FTSE recorded in the table. The 3 percent and 5 percent increases were chosen rather arbitrarily, other percentages could have been used.

At 3 percent increase per year the dollar amount of increase would range from $22.12 for 1967-1968 over 1966-1967 to $29.72 for 1977-1978 over the previous year. For the same years at 5 percent the range of increase would be from $36.86 to $60.04. Cost projections per FTSE for operational expenses would range from $759.34 or $774.08 in 1967-1968 to $1,020.49 or $1,260.78 for 1977-1978. Soon after the publication of this survey actual costs for the 1967-1968 school year will become available and a similar but more up-to-date table can quickly be prepared.

For each of the future years shown on the table it would be possible to compute estimates of total costs statewide. This has been done here, however, only for the last year given, that is, 1977-1978.

By taking the cohort survival FTSE projection for 1977 from Table 2.24 (36,225) and multiplying this by the 1977 3 percent increase cost figure ($1,020.49) a total statwide cost of $36,967,250.25 is obtained. At 5 percent annual increase the total would be $45,671,755.50.

If the linear FTSE projection of 39,625 students by 1977 is used (Table 2.23) the 3 percent increase figure would be $40,436,916.25 and the 5 percent one $49,958,407.50.

Unless additional financial aid is provided for the junior colleges in the years ahead primarily from state and perhaps federal sources, local sources are going to have to contribute significantly larger sums of money. The present state aid formula makes no provision for upward adjustment to help meet rising costs of operation.

Table 7.1

PROJECTED STATEWIDE AVERAGE COSTS PER FULL-TIME STUDENT EQUIVALENT 1967-1968 THROUGH 1977-1978 USING 1966-1967 AVERAGE COSTS AS A BASE AND ADDING 3 OR 5 PERCENT PER YEAR

	Increase		Projected Costs	
Year	at 3% Annually	at 5% Annually	at 3% Annual Increase	at 5% Annual Increase
	Actual		Actual	
1964-65	-.-		667.31	
1965-66	8.49		675.80	
1966-67	61.42		737.22	
Projected				
1967-68	22.12	36.86	759.34	774.08
1968-69	22.78	38.70	782.12	812.74
1969-70	23.46	40.63	805.58	853.37
1970-71	24.17	42.66	829.75	896.03
1971-72	24.89	44.80	854.64	940.83
1972-73	25.64	47.04	880.28	987.87
1973-74	26.41	49.39	906.69	1,037.26
1974-75	27.20	51.86	933.89	1,089.12
1975-76	28.02	54.45	961.91	1,143.57
1976-77	28.86	57.17	990.77	1,200.74
1977-78	29.72	60.04	1,020.49	1,260.78

IN CONCLUSION

Many aspects of the junior college picture in Arizona have been reviewed in this report. Many more could have been had the scope of the project permitted. There may be those who will be disappointed that certain matters were not examined. The survey team hopes, however, that most persons will feel that a wealth of material has been provided. Others should go on from the point where this study ends and further contribute to knowledge about the vital and dynamic junior college movement in the state.

As the state moves forward with its junior college system, initial costs and operational expenses must not be the only consideration; we must also consider losses in opportunities for the state and what the costs will be to society if the educational advantages are not provided. In the final analysis education really is an investment. We therefore conclude by restating the title of this report, Arizona Junior Colleges: An Investment in Youth and Adults.

END

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